

**REPORT ON THE  
IMPLEMENTATION OF THE P.A. 295  
RENEWABLE ENERGY STANDARD  
AND THE COST-EFFECTIVENESS  
OF THE ENERGY STANDARDS**

---

**Orjiakor N. Isigou, Chairman  
Monica Martinez, Commissioner  
Greg R. White, Commissioner**

**MICHIGAN PUBLIC SERVICE COMMISSION**  
Department of Energy, Labor & Economic Growth

February 15, 2011



## Table of Contents

	Page
Introduction.....	1
Report Criteria .....	1
Background: Renewable Energy Plans and Commission Approval.....	4
Background: Renewable Energy Reconciliation Cases and Commission Approval.....	6
Summary of Renewable Energy Data Collected .....	7
Status of Renewable Energy and Advanced Cleaner Energy .....	7
Michigan Renewable Energy Certification System (MIRECS) .....	9
Effect of the Renewable Energy and Energy Optimization Standard on Electricity Prices .....	11
The Cost of Renewable Energy Compared to the Cost of New Coal Energy .....	12
Has the Act Created an Unfair Competitive Advantage Between Utilities and AESs? .....	13
Cost-Effectiveness of the Renewable Energy Standard.....	14
Cost-Effectiveness of Competitive Bidding .....	15
Impact of the Renewable Energy Standard on Employment .....	23
Impact of Percentage Limits in Section 27(7) on Advanced Cleaner Energy Development.....	26
Cost-Effectiveness of Renewable Energy and Energy Optimization Standards .....	27
Recommendations.....	28

### Appendices

- A: Renewable Energy Filings: Case Numbers, Companies, Plan Approval Dates and Reconciliation Approval Dates
- B: Renewable Energy Monthly Surcharge Summary
- C: Electric Provider Renewable Energy Annual Report Data Summary
- D: Energy Optimization Surcharges by Company
- E: Request for Proposals/Requests for Information/Pre-Qualifications from Detroit Edison and Consumers Energy
- F: Consumers Energy’s Renewable Energy Contracts Submitted to the MPSC for Approval  
Detroit Edison’s Renewable Energy Contracts Submitted to the MPSC for Approval  
Contracts Submitted to the Commission Exclusive from Detroit Edison and Consumers Energy
- G: Experimental Advanced Renewable Program (EARP) and SolarCurrents Program

## Introduction

### Report Criteria

In October 2008, Public Act 295 of 2008 (PA 295 or the Act) was signed into law. Section 51(5)(a) through (i) (MCL 460.1051(5)) requires that by February 15, 2011, and each year thereafter, the Michigan Public Service Commission (MPSC or Commission) submit to the standing committees of the Senate and House of Representatives with primary responsibility for energy and environmental issues a report that does all of the following:

- (a) Summarizes data collected under this section.
- (b) Discusses the status of renewable energy and advanced cleaner energy in this state and the effect of this Subpart and Subpart B on electricity prices.<sup>1</sup>
- (c) For each of the different types of renewable energy sold at retail in this state, specifies the difference between the cost of the renewable energy and the cost of electricity generated from new conventional coal-fired electric generating facilities.
- (d) Discusses how the commission is fulfilling the requirements of subsection (4).<sup>2</sup>
- (e) Evaluates whether this Subpart has been cost-effective.
- (f) Provides a comparison of the cost effectiveness of the methods of an electric utility with 1,000,000 or more retail customers in this state as of January 1, 2008 obtaining renewable energy credits under the options described in section 33.
- (g) Describes the impact of this Subpart on employment in this state. The commission shall consult with other appropriate agencies of the department of labor and economic growth in the development of this information.
- (h) Describes the effect of the percentage limits under section 27(7) on the development of advanced cleaner energy.
- (i) Makes any recommendations the commission may have concerning amendments to this Subpart, including changes in the percentage limits under section 27(7), or changes in the

---

<sup>1</sup> Subpart A (MCL 460.1021-1053) deals with renewable energy standards. Subpart B (MCL 460.1071-1097) deals with energy optimization standards.

<sup>2</sup> Subsection (4) reads “The commission shall monitor reports submitted under subsection (1) and ensure that actions taken under this act by electric providers serving customers in the same distribution territory do not create an unfair competitive advantage for any of those electric providers.” (MCL 460.1051 (4)).

definition of renewable energy resource or renewable energy system to reflect environmentally preferable technology.

Additionally, Section 97 of the Act (MCL 460.1097) requires the following:

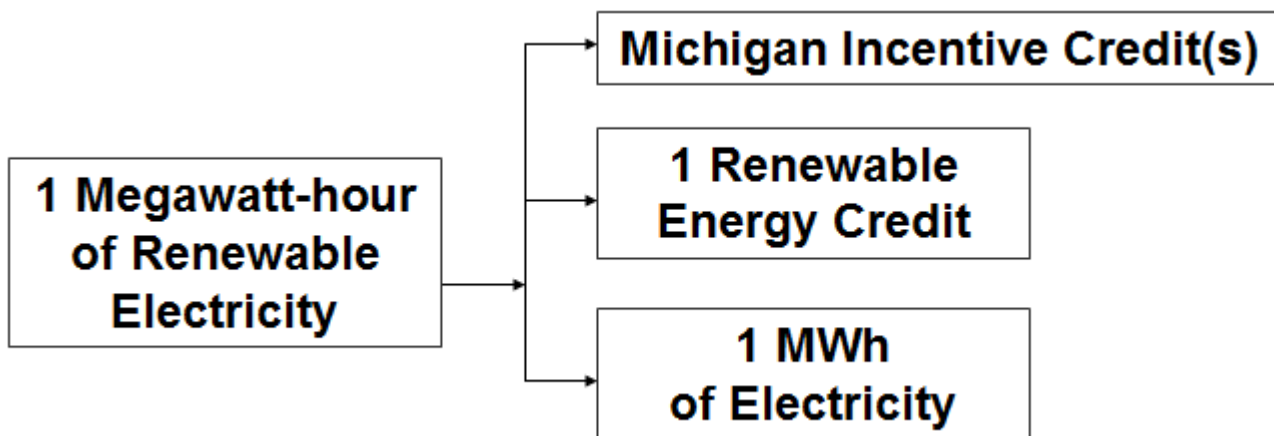
(6) By February 15, 2011 and each year thereafter and by September 30, 2015, the commission shall submit to the committees described in subsection (4) a report that evaluates and determines whether this Subpart and Subpart A have each been cost-effective and makes recommendations to the legislature. The report shall be combined with any concurrent report by the commission under section 51.

This report provides information on Commission renewable energy activities related to the Act through 2010 and summarizes data provided in electric provider annual reports for the 2009 reporting period.

### **Background: Renewable Energy Plans and Commission Approval**

Subpart A of the Act requires electric providers to meet a 10 percent renewable energy standard based on retail sales by the end of 2015. The Act includes interim compliance steps for 2012 – 2014. For 2016 and each year thereafter, the Act requires electric providers to maintain the same amount of renewable energy credits (RECs) needed to meet the standard in 2015. Compliance with the renewable energy standard is demonstrated through the use of renewable energy credits. One renewable energy credit is created for each megawatt-hour (MWh) of renewable energy generated. Additionally, Section 39 of the Act provides for Michigan incentive renewable energy credits. Renewable energy credits may be sold separately from the energy as shown in **Figure 1**.

**Figure 1: Renewable Energy Credits**



The renewable energy standard is applicable to Michigan's regulated electric utilities, cooperatives, member-regulated cooperatives, municipal utilities and alternative electric suppliers. The Act directs electric providers to file renewable energy plans (REPs). REPs describe how the electric provider intends to meet the renewable energy standard requirements. The Commission approved 74 initial renewable energy plans. The approved plans included nine investor owned utilities (IOUs), 10 electric cooperatives, 41 municipal electric utilities and 14 alternative electric suppliers (AESs). A listing of case numbers, electric provider names, and approval dates can be found in *Appendix A*. As directed by the Act, the 74 initial renewable energy plan cases were concluded within 90 days or less. The Commission conducted contested cases for MPSC rate-regulated electric providers' filings. Four rate-regulated providers established revenue recovery mechanisms to collect renewable energy surcharges on customer bills. Details about the surcharges can be found in *Appendix B*. Section 45 of the Act limits the retail rate impact (surcharge amount) of the renewable energy standard to the following:

- (a) \$3.00 per month per residential customer meter.
- (b) \$16.58 per month per commercial secondary customer meter.
- (c) \$187.50 per month per commercial primary or industrial customer meter.

With the exception of three electric providers, (Detroit Public Lighting Department, City of Sebawaing, and We Energies) all are expected to be able to meet the 10 percent renewable energy standard in 2015.

Detroit Public Lighting represents approximately 0.5 percent of Michigan's retail electricity total and reported in its plan that due to the surcharge limits, it did not expect to reach the 10 percent compliance percentage in 2015. The City of Sebawaing represents approximately 0.04 percent of Michigan's retail electricity total, and reported in its plan that it will be deficient in renewable energy

credits for the years 2014 through 2029 due to the surcharge caps. We Energies represents approximately 2.5 percent of Michigan's retail electricity total and reported in its plan that it expected to exceed the retail rate limits beginning in 2012. However, the actual contract prices for renewable energy are much lower than forecasted in the 2009 renewable energy plans. The biennial review plan cases that will be filed in the next year should reflect lower renewable energy prices and may even show these three electric providers are able to obtain the needed renewable energy and stay within the retail rate impact limits.

Commission Staff created a [Web page](#) with links to each electric provider's renewable energy plan case docket.<sup>3</sup>

### **Background: Renewable Energy Reconciliation Cases and Commission Approval**

Per Section 49 (1) of Act 295 (MCL 460.1049(1)), the MPSC rate-regulated electric providers are required to file annual renewable energy cost reconciliation cases.<sup>4</sup>

For the 2009 reconciliation period, cases were filed by 14 electric providers. After Staff review, all six electric cooperatives filed settlement agreements to their reconciliations, as have six investor owned utilities. The two remaining investor-owned utilities, Consumers Energy Company (Consumers Energy) and The Detroit Edison Company (Detroit Edison), are currently in the contested case proceeding process to determine the reasonableness and prudence of expenditures and amounts collected pursuant to the revenue recovery mechanism. Case numbers and order dates for each renewable energy reconciliation case can be found in *Appendix A*.

---

<sup>3</sup> [http://www.michigan.gov/mpsc/0,1607,7-159-16393\\_53570-240176--,00.html](http://www.michigan.gov/mpsc/0,1607,7-159-16393_53570-240176--,00.html)

<sup>4</sup> Commission Staff audits the pertinent revenues and expenses along with other tasks. Staff analyzes and determines the electric provider's compliance with their filed renewable energy plan per Act 295. Beginning in 2012, the first compliance year for the Renewable Energy Standard, the Commission will determine whether the provider has met its compliance targets. For 2009 renewable energy reconciliation case electronic dockets see [http://www.michigan.gov/mpsc/0,1607,7-159-16393\\_53570-240178--,00.html](http://www.michigan.gov/mpsc/0,1607,7-159-16393_53570-240178--,00.html).

## Summary of Renewable Energy Data Collected

Electric providers are directed by Section 51(1) of the Act (MCL 460.1051(1)) to file annual reports for each plan year beginning with 2009. The first set of Michigan electric provider annual reports were filed during 2010 covering calendar year 2009 and are available on the [Commission's website](#).<sup>5</sup> Commission Staff worked with electric providers to develop an annual report template to ensure consistency in reporting. In addition to the information specifically listed as being required in electric provider annual reports in Section 51, the report template also requested information necessary to determine each provider's 2009 estimated annual renewable energy percentage. Based on the data provided, the 2009 renewable energy percentage is 3.6 percent. This is an increase from 2.9 percent in 2007 which was the most recent year the MPSC compiled this data. (The 2.9 percent renewable energy figure is only applicable to the MPSC rate-regulated providers while the 3.6 percent figure includes data from all electric providers except AESs, see *Appendix C*.) Michigan's renewable energy percentage is expected to increase significantly.

Electric providers reported a total of 3,507,105 estimated available RECs and 146,099 Advanced Cleaner Energy Credits (ACECs) for the 2009 reporting period.

Based on annual report data, rate-regulated electric providers reported 2009 expenditures of \$5,287,600 to comply with the renewable energy standard. For 2010, these same providers plan to spend a total of \$18,384,576. Data collected from annual reports is shown in *Appendix C*.

## Status of Renewable Energy and Advanced Cleaner Energy

For 2009, electric providers reported a total of 3,507,105 estimated available RECs and 146,099 ACECs. Michigan's 2009 estimated renewable energy percentage of 3.6 percent is expected

---

<sup>5</sup> [http://www.michigan.gov/mpsc/0,1607,7-159-16393\\_53570-240179--,00.html](http://www.michigan.gov/mpsc/0,1607,7-159-16393_53570-240179--,00.html).

to increase significantly during the next two years as a total of approximately 700 MW of new renewable energy will become commercially operational by the end of 2012 in response to the Act. As of January 2011, 31 renewable contracts have been filed with the Commission and 30 have been approved (one contract approval request was withdrawn). As eventful as 2009 and 2010 have been in the renewable energy industry in Michigan, based on the contracts approved for new renewable projects, future years will provide for more growth, an emerging marketplace and ever evolving opportunities. Projects that were merely theoretical a year ago are now under contract with commercial operation dates before the end of 2012. **Figure 2** shows the expected commercial operation dates for renewable energy projects based on the contracts filed at the MPSC through 2010. The breakdown by renewable energy technology type is shown on **Figure 3**.

**Figure 2: Cumulative New Renewable Energy Capacity and Commercial Operation Dates**

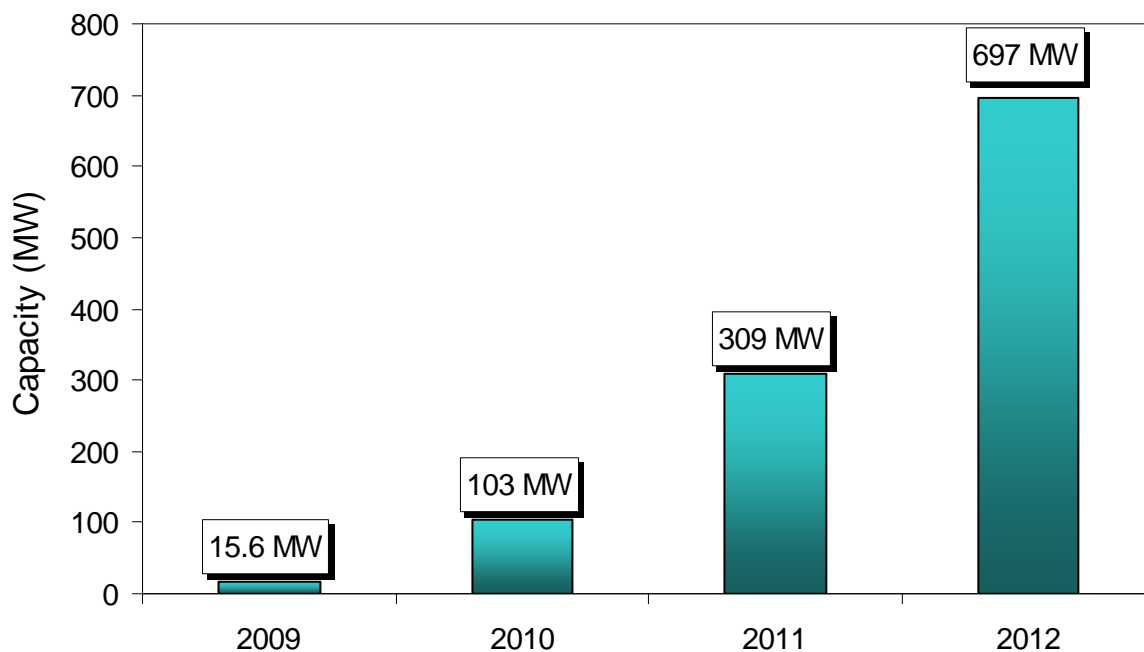
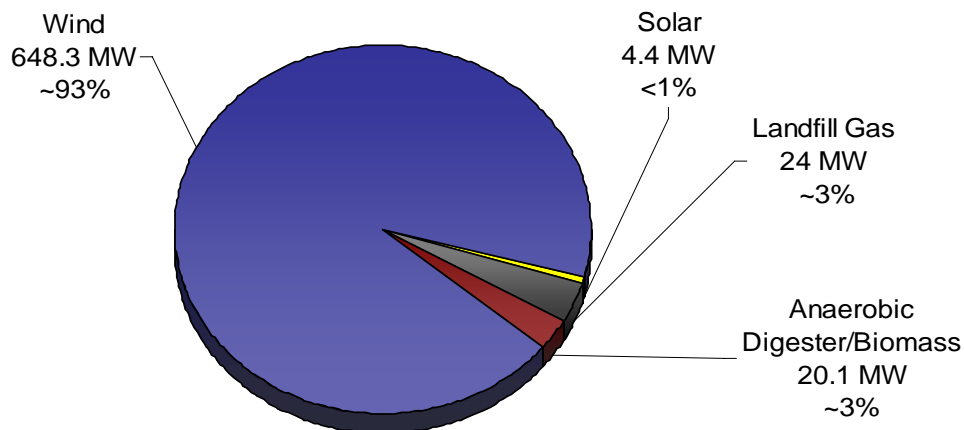




Figure 3: New Renewable Capacity by Technology Type

## New Capacity (MW) by Technology



According to the annual reports filed by each rate-regulated electric provider, spending of \$18.4 million on renewable energy was anticipated during 2010. Additionally, Consumers Energy and Detroit Edison both implemented forward-thinking solar photovoltaic (PV) pilot programs which have significantly increased installed solar PV and created enthusiasm in Michigan's solar PV community. These PV pilot programs are discussed in *Appendix G*.

Four of Michigan's 15 rate-regulated electric providers established a revenue recovery mechanism to comply with the renewable energy section of PA 295 and all but three of the 74 electric providers expect to meet the 10 percent standard. Further, costs of renewable energy are lower than initially expected compared to projections in the REPs and continue to decrease. This trend is seen in the contracts filed with the Commission. When electric providers file new REPs in the spring of 2011, we anticipate costs to be lower than in the initial plans filed in 2009. As we look to the future, the outlook for meeting the 10 percent standard in Michigan is favorable.

## **Michigan Renewable Energy Certification System (MIRECS)**

Section 41 of PA 295 (MCL 460.1041) directs the Commission to “establish a renewable energy credit certification and tracking program.” The Commission completed this directive when the Michigan Renewable Energy Certification System (MIRECS) was launched on October 30, 2009. On August 11, 2009, the commission issued a minute action approving the contract between the Department of Energy, Labor and Economic Growth and APX, Inc., that designates APX, Inc. as the State of Michigan Administrator of the renewable energy credit and tracking program.

MIRECS has been designed to track and certify all Michigan credits necessary for compliance with PA 295. The credits include renewable energy (REC), advanced cleaner energy (ACEC), energy optimization (EOC) and incentive (IREC) (on-peak, solar, Michigan labor and manufacturing, etc.). At this time, EOCs are not transferable. This functionality is being considered.

For 2009, nearly 3 million MWh of renewable energy consisting of REC/IREC were certified in the MIRECS. This figure is expected to increase as additional certifications occur. The number of generating units within MIRECS continues to grow, as of February 1, 2011, there were 69 registered accounts and 139 registered projects (Generators) in MIRECS.

MIRECS is being designed to fully integrate with other tracking systems including the Midwest Renewable Energy Tracking System (M-RETS) and North American Renewables Registry. This integration will allow both businesses and individual citizens to sell their product to a wider market.

Commission Staff continue to answer questions and further design procedures to improve upon the functionality of MIRECS. To assist with this process, Commission Staff will continue to hold training/information meetings. MIRECS may be accessed at <http://www.mirecs.org>.

## **Effect of the Renewable Energy and Energy Optimization Standard on Electricity Prices**

The recent recessionary period has caused a significant reduction in electricity demand in the region and a resulting drop in wholesale electricity prices. This swing in electricity prices has made it difficult to identify price changes due to the impact of the Renewable Energy and Energy Optimization Standards. The Midwest Independent Transmission System Operator (MISO) operates an energy market that serves as a platform for matching the supply and demand of energy. The summer instantaneous peak load for the MISO footprint fell from 104,292 MW in 2007 to 96,790 MW in 2009.<sup>6</sup> The lack of demand has caused an overabundance of generation available at any given time and has played a part in the decreasing cost of electricity within the MISO footprint. MISO reported the following in its 2009 Summer Assessment:

The average Real-Time LMP [Locational Marginal Price] during the 2009 summer season was 56.4% lower than the average price during the 2008 summer. Price fell from \$55.90/MWh in the 2008 summer to \$24.38/MWh in the 2009 summer.

Part of the decline in prices was due to the cost of natural gas, which fuels much of the State's combustion turbine plants dispatched to meet peak demands. The 2009 national average for natural gas prices decreased more than 50 percent compared to 2008 prices.<sup>7</sup> There is no indication that the renewable energy standard or energy optimization standard have had any impact on electricity prices in Michigan.

For the 2009 annual reporting period, Michigan only had three electric providers collecting revenue through a revenue recovery mechanism renewable energy surcharge. All three providers (Alpena Power, Consumers Energy, and Detroit Edison) began collecting the surcharge revenue in September 2009. We Energies' renewable energy surcharge began during the January 2010 billing

---

<sup>6</sup> See <http://midwestmarket.org/home> then Market Info, Market Reports, Market Analysis, select report year and month.

<sup>7</sup> [http://www.eia.doe.gov/emeu/steo/pub/cf\\_tables/steotables.cfm?tableNumber=16](http://www.eia.doe.gov/emeu/steo/pub/cf_tables/steotables.cfm?tableNumber=16)

month. A summary of renewable energy surcharge amounts, amounts collected, and copies of each electric provider's tariff sheets showing the surcharge amounts are shown in *Appendix B*. A summary of energy optimization surcharges for each company is shown in *Appendix D*. With the renewable energy and energy optimization programs just ramping up, no impacts on price have been quantified at this point. The electricity market has absorbed this initial level of capacity injections and demand reductions with little to no fluctuation in prices.

### **The Cost of Renewable Energy Compared to the Cost of New Coal Energy**

Pursuant to Section 21(6)(b) (MCL 460.1021(6)(b)), rate-regulated electric provider REPs were required to show that the life cycle cost of renewable energy acquired less the life cycle net savings associated with Energy Optimization Plans did not exceed the life cycle cost of electricity generated by a new conventional coal-fired facility. The Commission Staff filed a letter in MPSC Case No. U-15800 to provide the required life cycle cost of electricity generated by a new conventional coal plant:

The Commission's temporary order implementing 2008 PA 295, Case Number U-15800, directed the Staff to work with the providers to develop the required life cycle cost of electricity generated by a new conventional coal-fired facility in terms of a guidepost consisting of a levelized busbar rate, in \$/MWh, of an advanced-supercritical pulverized coal plant with a life cycle of 40 years. The Commission directed the Staff to submit the number to the Commission by January 30, 2009. The Staff has diligently worked with the providers to develop the guidepost rate and finds that the number is \$133 per MWh.<sup>8</sup>

By comparing the calculated levelized cost of \$133/MWh for a new conventional coal-fired power facility with the combined average levelized contract prices in **Figure 4**, costs for renewable energy using all of the renewable energy technologies are less than the levelized cost with the exception of a single hydro-electric contract. The hydro-electric combined average price is

---

<sup>8</sup> Excerpt from Commission Staff January 30, 2009 [Guidepost Rate Letter](http://efile.mpsc.state.mi.us/efile/docs/15800/0023.pdf) (<http://efile.mpsc.state.mi.us/efile/docs/15800/0023.pdf>).

representative of a single contract that was the result of Consumers Energy’s first solicitation for small (under 5 MW) facilities. Consumers Energy and Detroit Edison have since seen much lower prices for renewable energy.

**Figure 4: Average Levelized Renewable Energy Contract Prices for Consumers Energy and Detroit Edison**

Consumers Energy					
Technology	Wind	Anaerobic Digester	Biomass	Landfill Gas	Hydro
Average	\$98.83	\$128.14	--	\$127.53	\$143.50
Detroit Edison					
Technology	Wind	Anaerobic Digester	Biomass	Landfill Gas	Hydro
Average	\$104.72		\$98.94	\$98.97	--
<b>Combined Average</b>	<b>\$101.78</b>	<b>\$128.14</b>	<b>\$98.94</b>	<b>\$113.25</b>	<b>\$143.50</b>

### **Has the Act Created an Unfair Competitive Advantage Between Utilities and AESs?**

Consumers Energy and Detroit Edison have made substantial progress toward complying with the renewable energy standard. Consumers Energy has filed renewable energy contracts with the Commission for 396 MW of renewable energy and Detroit Edison has contracted for 252 MW, as shown in *Appendix F*. In addition to meeting the requirement in PA 295 for renewable energy credits that is applicable to all electric providers, both Consumers Energy and Detroit Edison also have renewable capacity requirements pursuant to Section 27 of the Act. By the end of 2013, Consumers Energy is required to obtain 200 MW of nameplate capacity that was not in commercial operation, or power purchase agreements that were not in effect, before the effective date of the Act. Similarly, Detroit Edison’s capacity portfolio requirement for 2013 is 300 MW. By the end of 2015, Consumers Energy’s and Detroit Edison’s total capacity portfolio requirement increases to 500 MW and 600 MW, respectively.

AESs are also required to meet the energy credit requirement contained in the Act, but not the separate capacity requirement. The first compliance year for AESs, Consumers Energy and Detroit Edison is 2012. Almost all AESs have indicated in their renewable energy plans and 2009 annual reports that they will purchase renewable energy credits to meet the 2012 renewable energy standard requirement. Customer choice participation levels are at the maximum amount allowed by law and both electric providers currently have customers waiting in the queue. Although there are no indications that the Act is creating an unfair competitive advantage between utilities and AESs, the two largest utilities in Michigan have driven the expansion of renewable energy and have incurred the lion's share of the associated costs while the AESs have incurred little or no costs associated with complying with the statute at this time.

### **Cost-Effectiveness of the Renewable Energy Standard**

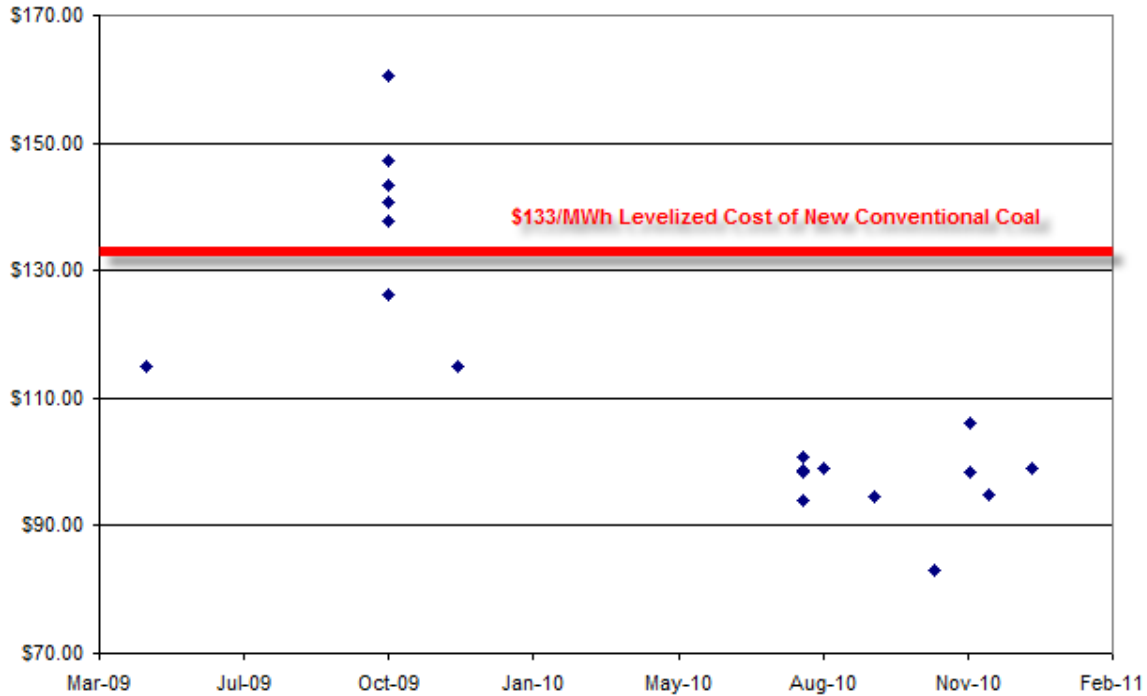
MCL 460.1051(5)(e) requires an evaluation of the cost-effectiveness of the renewable energy standard. As discussed in the previous section, compared to the alternative of building a new conventional coal facility, the renewable energy contracts are significantly lower in price with the exception of five small contracts with a combined capacity of under 8MW negotiated early on as part of REP activities.

The actual cost of contracts submitted to the Commission to date show the pricing trend continues downward. This is evident in Consumers Energy's combined application for approval of its contracts with Blissfield Wind, Harvest II Wind, Michigan Wind II and WM Renewable Energy-Pine Tree Acres. These contracts represented a significant cost reduction compared to the projected costs included in the Renewable Energy Plan.

Contracts submitted to the Commission through 2010 total just under 700 MW of new renewable capacity. Weighting the levelized costs of these contracts by the generation in MWh over

the life cycle of the renewable energy systems resulted in an average cost of \$98.68/MWh. Without factoring in the savings associated with the Energy Optimization Plans as discussed in Section 21(6)(b), almost all actual realized renewable energy contract prices are lower than new coal-fired capacity and show signs of continued decline as shown in **Figure 5**.

**Figure 5: Levelized Cost of MPSC Approved Contracts Over Time Compared to the Cost of a New Conventional Coal Fired Facility**



### Cost-Effectiveness of Competitive Bidding

Section 33 of PA 295 (MCL 460.33) includes a provision for electric providers who serve more than 1,000,000 electric customers in this state as of January 1, 2009 in regard to competitive bidding. Consumers Energy and Detroit Edison (individually, Company; collectively, Companies) fall under this provision.

Pursuant to Section 33, the Companies are required to obtain renewable energy credits necessary to meet the renewable energy credit standard in 2015 by one or more of the following [methods](#):

(i) Renewable energy systems that were developed by and are owned by the electric provider. An electric provider shall competitively bid any contracts for engineering, procurement, or construction of any new renewable energy systems...

(ii) Renewable energy systems that were developed by 1 or more third parties pursuant to a contract with the electric provider under which the ownership of the renewable energy system may be transferred to the electric provider, but only after the renewable energy system begins commercial operation. Any such contract shall be executed after a competitive bidding process conducted pursuant to guidelines issued by the commission.

(b) At least 50% of the renewable energy credits shall be from renewable energy contracts that do not require transfer of ownership of the applicable renewable energy system to the electric provider or from contracts for the purchase of renewable energy credits without the associated renewable energy. A renewable energy contract or contract for the purchase of renewable energy credits under this subdivision shall be executed after a competitive bidding process conducted pursuant to guidelines issued by the commission.

The Companies have conducted 10 requests for proposals (RFP) in total. Consumers Energy has conducted five solicitations. Similarly, Detroit Edison has conducted five solicitations and one Solar Solicitation of Interest (SSOI). In addition to the RFPs, the Companies have also conducted prequalification and request for qualification submissions. Both Companies have relatively little experience with large scale renewable energy procurement and these processes helped determine the best approaches to RFP development. An explanation of these events is provided in *Appendix E*. In response to the majority of the Companies' RFPs, Commission Staff has reviewed competitive bidding activities through process audits. The purpose and design of the audits was to assure that the Companies followed the processes and procedures outlined in the Commission's December 4, 2008 Temporary Order in MPSC Case No. U-15800, [Attachment D](#)<sup>9</sup> that lays out detailed instructions for this activity pursuant to Section 33 of Act 295. Details about each Company's competitive bidding activities are shown in *Appendix E*.

---

<sup>9</sup> <http://efile.mpsc.state.mi.us/efile/docs/15800/0001.pdf>.



Pursuant to [Section 37 of the Act](#) (MCL 460.1037), renewable energy contracts entered into by an electric provider whose rates are regulated by the Commission must be submitted to the Commission for determination of whether the terms are reasonable and prudent. On December 4, 2008, the Commission issued a Temporary Order in MPSC Case No. U-15800 implementing Act 295 pursuant to Section 191 of the Act. In its [Temporary Order](#) (at p. 16), the Commission explains that it intends to review and approve contracts within 30 days of the filing. In the Commission's view, expeditious treatment of these contracts is necessary to encourage development of the most effective and highest quality renewable energy resources.

PA 295 tasked Consumers Energy and Detroit Edison with incremental capacity portfolio benchmarks that have caused the Companies' to start acquiring contracts for renewable energy and capacity at a much quicker rate than other rate-regulated electric providers. Section 27 of the Act (MCL 460.1027) states in part:

(1) Subject to sections 31 and 45, and in addition to the requirements of subsection (3), an electric provider that is an electric utility with 1,000,000 or more retail customers in this state as of January 1, 2008 shall achieve a renewable energy capacity portfolio of not less than the following:

(a) For an electric provider with more than 1,000,000 but less than 2,000,000 retail electric customers in this state on January 1, 2008, a renewable energy capacity portfolio of 200 megawatts by December 31, 2013 and 500 megawatts by December 31, 2015.

(b) For an electric provider with more than 2,000,000 retail electric customers in this state on January 1, 2008, a renewable energy capacity portfolio of 300 megawatts by December 31, 2013 and 600 megawatts by December 31, 2015.

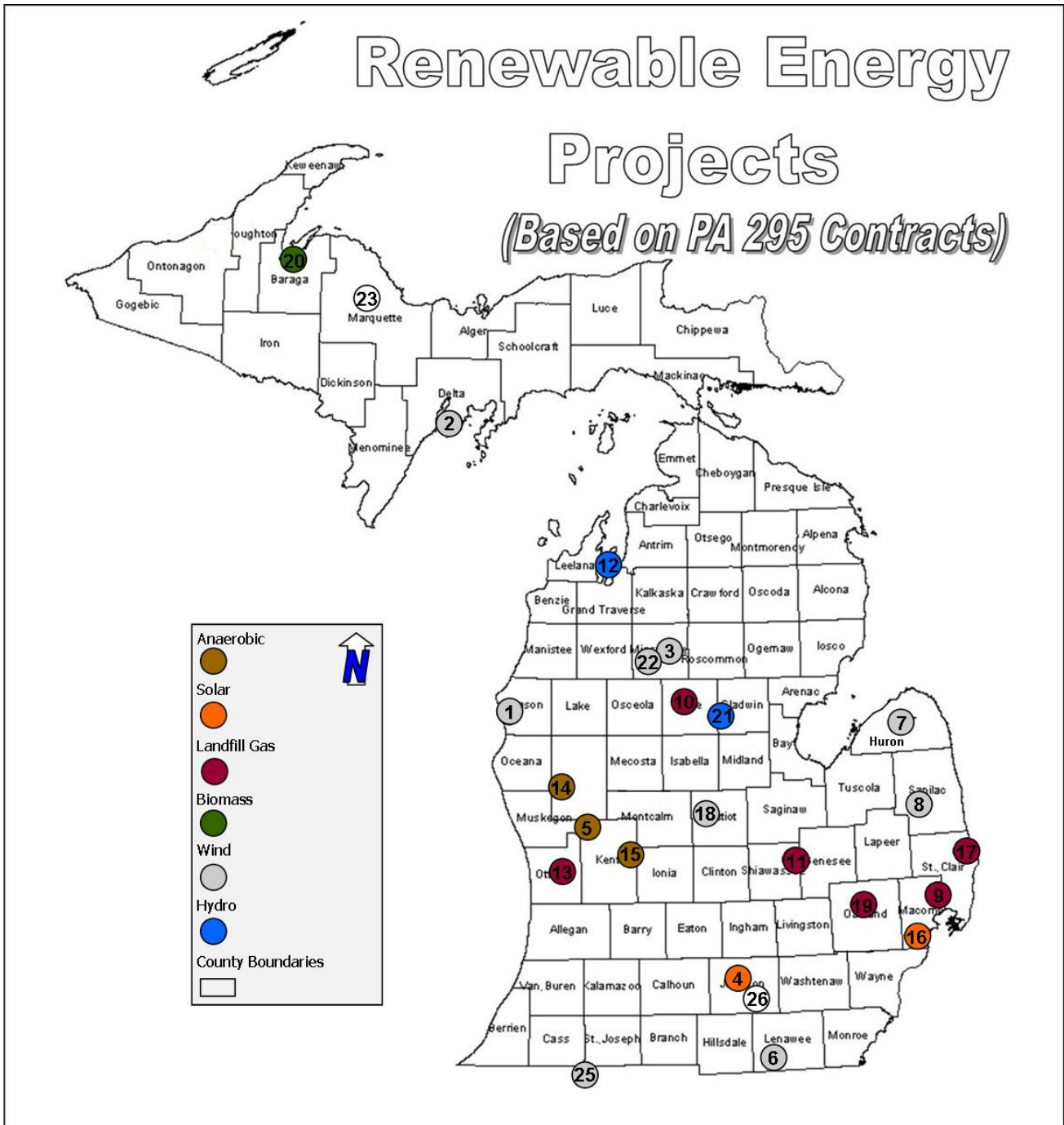
*Appendix F* lists all renewable energy contracts that have been submitted to the MPSC for approval to date. **Figure 6** is a map showing the location of all PA 295 contracts approved by the Commission. The MWh contract prices represented in *Appendix F* are levelized cost calculations and reflect the prices over the contract term for all power purchase agreements or, in the case of a Company-owned

project, the useful life.<sup>10</sup> The levelized cost value is used to compare multiple contracts with varying terms and conditions. It should be noted that the average levelized costs of the contracts have declined with the most recently submitted contracts. Section 33(3) of the Act (MCL 460.1033(3)) states in part: “The commission shall not approve a contract based on an unsolicited proposal unless the commission determines that the unsolicited proposal provides opportunities that may not otherwise be available or commercially practical.” Of the 30 contracts from four electric providers approved to date by the Commission, all but two have been from Consumers Energy or Detroit Edison and nine have been unsolicited. All of the contracts filed are consistent with the electric providers’ Renewable Energy Plans (REPs). The contract prices have been lower than expected. This is particularly evident in Consumers Energy’s application for approval of its contracts with Blissfield Wind, Harvest II Wind, Michigan Wind II and WM Renewable Energy-Pine Tree Acres, as the company stated a reduction of \$770 million compared to the incremental cost of compliance included in its REP for an equivalent amount of renewable energy. Opportunities that may not otherwise be available or commercially practical associated with the unsolicited bids filed to date are explained below.

---

<sup>10</sup> MPSC Staff intends to perform an audit of the Companies’ levelized cost calculations in the early part of 2011. Through RFP process audits, Staff has reviewed actual costs of contracts obtained through most of the Companies’ competitive solicitations. In addition, Staff was provided an opportunity to review the actual costs of all contracts listed in *Appendix F*.

Figure 6: Locations of Renewable Energy Projects



Multiple Solar projects participating in Consumers Energy’s Experimental Advanced Renewable Program are represented by a solar symbol placed at Jackson. Multiple Solar projects participating in Detroit Edison’s SolarCurrents Program are represented by a solar symbol placed at Detroit. Alpena Power Company purchasing “bulk of RECs” from Consumers Energy represented by a white symbol placed at Jackson. Consumers Energy purchasing misc RECs from UPPCo represented by a white symbol placed at UPPCo’s headquarters. Map shows renewable energy projects based on PA 295 contracts filed at the Michigan Public Service Commission.

\*Numbers shown on map correspond to the Map Key Column provided on *Appendix F*.

Consumers Energy has filed contracts with a total nameplate capacity of 396 MW with 372.1 MW from wind contracts. Consumers Energy anticipated purchasing approximately 463 MW and building approximately 450 MW in its REP<sup>11</sup> with the vast majority of that balance coming from wind. Detroit Edison's contracts total 252.6 MW of nameplate capacity with 226.2 MW from wind contracts. Detroit Edison anticipated purchasing approximately 652 MW and owning 580 MW<sup>12</sup> in its REP,<sup>13</sup> with the vast majority coming from wind, similar to Consumers Energy. *Appendix F* details the contracts filed by Consumers Energy and the Detroit Edison. Additionally, *Appendix F* lists the Alpena Power Company (Alpena) and Indiana Michigan Power Company (I&M) contracts filed for Commission approval. Alpena purchases the majority of its energy for its customers from Consumers Energy. Alpena plans to purchase RECs at \$30.37/REC from Consumers Energy to meet its renewable portfolio requirements. The contract submitted provides for RECs over the 20-year plan period. Commission approval of Alpena's contract was granted on September 15, 2009.<sup>14</sup> I&M is purchasing energy, capacity and RECs from the 50 MW Fowler Ridge Wind Farm II, located in Indiana. The term of the contract is 20 years and was approved by the Commission on November 15, 2009.<sup>15</sup>

The 0.35 MW Scenic View Dairy contract was Consumers Energy's first unsolicited bid. This was a continuation of a pre-existing contract between the Company and Scenic View Dairy, LLC and the new contract term is 63 months. The original contract provided energy for the Company's voluntary Renewable Resource Program or "Green Generation Program." Consumers Energy stated that due to the Scenic View Dairy contract price of \$83.07/MWh being significantly less than that of similar contracts recently approved by the Commission; the

---

<sup>11</sup> <http://efile.mpsc.state.mi.us/efile/docs/15805/0023.pdf> and <http://efile.mpsc.state.mi.us/efile/docs/15805/0024.pdf>

<sup>12</sup> Includes the 15 MW of Company-owned solar systems.

<sup>13</sup> Exhibit A-1 (IMD-1), <http://efile.mpsc.state.mi.us/efile/docs/15806/0030.pdf>.

<sup>14</sup> <http://efile.mpsc.state.mi.us/efile/docs/15804/0022.pdf>

<sup>15</sup> <http://efile.mpsc.state.mi.us/efile/docs/15808/0022.pdf>

contract provides an opportunity for the Company that may not otherwise be available or commercially practical under reasonable terms and conditions. The Commission approved this contract on October, 26, 2010.<sup>16</sup>

On October 20, 2010, Consumers Energy filed an application requesting ex parte approval of 45 standard contracts for the purchase of solar energy, capacity and renewable energy credits under the Experimental Advanced Renewable Program (EARP). The contracts will result in the purchase of 1,036.7 kW. The contracts all have a 12-year term from the signing date, with the first contract beginning September 21, 2009. The contracts filed for approval in the application represent the completion of phase 1 of the program. Phase 1 projects must have been installed and ready to deliver energy by May 1, 2010.

The EARP was proposed in the Company's Renewable Energy Plan filed on February 17, 2009 and approved by the Commission on May 26, 2009. The EARP pays a firm price (residential: \$0.65 - \$0.525/kWh and commercial: \$0.45 - \$0.375/kWh) to retail customers for each kWh of generation produced by the customer's solar generation systems over a twelve year period. The total program size is 2 MW. The Commission approved the phase 1 contracts on December 21, 2010. The Company anticipates filing the phase 2 contracts for approval in late 2011.

On November 15, 2010, Consumers Energy filed an application requesting ex parte approval of two unsolicited long-term, 20-year contracts with Heritage Garden Wind Farm I, LLC, and Heritage Stoney Corners Wind Farm II, LLC, (collectively Heritage). The contracts are for 28.6 MW and 12.3 MW, respectively, of energy, capacity and RECs. The Garden Wind Farm will be constructed in Delta County in the Upper Peninsula, while the Stoney Corners Wind Farm II will be constructed in Missaukee, Osceola and Wexford Counties. Delivery under

---

<sup>16</sup> <http://efile.mpasc.state.mi.us/efile/docs/15805/0242.pdf>

these contracts is expected to begin January 1, 2012. Consumers Energy states that these contracts provide opportunities that may not otherwise be available or commercially practical under reasonable terms and conditions because 13 Northern Power Systems' Michigan made, direct drive, permanent magnet wind machines will be constructed at the Garden Wind Farm. The technology is expected to reduce noise and require less maintenance, which will reduce ongoing operating and maintenance (O&M) costs. The Commission approved these contracts on November 19, 2010.<sup>17</sup>

Detroit Edison's first renewable energy contract under Act 295 was filed on March 27, 2009. The 20-year project with Heritage Stoney Corners Wind Farm I, LLC was the result of an unsolicited bid. The Company explained in its application that the contract provided opportunities that would not otherwise be available or commercially practical as it had an early commercial operation date of December 21, 2009 and provided a levelized price of \$115/MWh that was considered reasonable compared to projected prices in the REPs. The Commission approved the contract on April 30, 2009.<sup>18</sup> This contract was amended to reflect the addition of 12.2 MW of nameplate capacity to the 14 MW previously approved. The additional capacity included a 2.2 MW direct drive permanent magnet wind machine that had the potential for economic development opportunities in Michigan. This is the same machine that is expected to be deployed at the Heritage Garden Wind Farm I, LLC site under the under a subsequent contract with Consumers Energy. The commercial operation date for the amended contract is January 2011. The amended contract was approved by the Commission on December 1, 2009.<sup>19</sup>

On September 24, 2010 Detroit Edison filed an application for approval of an unsolicited renewable energy contract with its affiliate Blue Water Renewables for a 3.2 MW landfill gas

---

<sup>17</sup> <http://efile.mpsc.state.mi.us/efile/docs/15805/0257.pdf>

<sup>18</sup> <http://efile.mpsc.state.mi.us/efile/docs/15806/0126.pdf>

<sup>19</sup> <http://efile.mpsc.state.mi.us/efile/docs/15806/0192.pdf>

project. The Company noted that the project provides opportunities that would not otherwise be available or commercially practical, as it believes the landfill is the first commercial-scale septage injection landfill-gas source in the United States, thereby speeding up the production of landfill gas. The contract was approved on January 20, 2011.

Comparing the cost-effectiveness of the renewable energy competitive bidding resource acquisition methods described in Section 33 of the Act to an electric provider-owned project shows relatively little variance. Considering that Consumers Energy and Detroit Edison have each filed one application for approval of provider-owned contracts, the data is limited. Consumers Energy has filed contracts for its Lake Winds wind project in Mason County with a combined levelized cost of \$95/MWh. Detroit Edison has filed a contract for a build-transfer arrangement with Gratiot County Wind that has an expected levelized price of approximately \$94.43/MWh. To compare these costs, a weighted average of the levelized wind contract costs equal to \$98.46/MWh was calculated based on the seven wind non-electric provider-owned contracts filed by Detroit Edison and Consumers Energy. The analysis shows the electric provider-owned wind projects filed so far are approximately 3.5 percent less.

## **Impact of the Renewable Energy Standard on Employment**

There has been significant renewable energy activity in Michigan since the passage of the renewable energy standard. **Figure 2** shows that by the end of 2010, 103 MW of new renewable energy began commercial operation and that by the end of 2012, a total of 697 MW of new renewable energy is expected to be online. Thirty renewable energy contracts have been approved by the Commission through 2010. While data on the impact of Michigan's renewable energy standard on employment is still being compiled, the Commission is aware of several

undertakings which suggest a positive influence on employment and economic growth in this state.

The total aggregate number of Incremental Cost of Compliance (surcharge) dollars allocated and spent in 2009 according to rate-regulated electric providers' renewable energy cost reconciliations was \$3.17 million. Due to timing of the electric providers' Renewable Energy Plans, the above calculation is based only on approximately four months of 2008 PA 295 surcharge collections from customers. It is reasonable to conclude that data for later years will reflect significant additional utility investment in Michigan owing to the renewable energy standard.

Indeed, there has been economic development in Michigan that can be attributed to the Act. A 2009 power purchase contract between Detroit Edison and Heritage Sustainable Energy provided an opportunity to site a pilot Northern Power Systems 2.2 MW direct drive, permanent magnet wind turbine, a type of turbine that had yet to be commercially installed at this scale in the United States. Detroit Edison explained in the application requesting approval of the power purchase contract that siting a pilot unit offers Michigan a unique opportunity to demonstrate leadership in renewable technologies which may offer advantages in attracting wind turbine generation manufacturing facilities to the state.

This has proven to be the case with the Heritage Garden Wind Farm, a 28.6 MW wind energy project slated to be developed under Act 295 and under a 2010 power purchase agreement with Consumers Energy. This project is credited with resulting in the first large-scale production of utility-scale wind turbines fully made in Michigan. Northern Power Systems will build the direct drive, permanent magnet wind turbines in its Saginaw, Michigan facility where it expects to employ up to 137 workers by 2014.



Detroit Edison's customer-owned SolarCurrents and Consumers Energy's Experimental Advanced Renewable Programs have resulted in increased activity for Michigan's small-scale solar installers. As part of the 15 MW company-owned SolarCurrents program, Detroit Edison contracted with Nova Consultants, a company with a Novi, Michigan office, to design and construct up to 3 MW of solar PV by the end of 2011.

The Renewable Energy Project map provided on **Figure 6** shows that all but one of the new renewable energy projects is located within the state. The Michigan incentive renewable energy credit provisions in Section 39 of the Act provide additional renewable energy credits for projects constructed with Michigan equipment and labor. To maximize the amount of renewable energy credits generated, developers are looking for ways to increase the quantities of Michigan equipment and labor which is expected to have a positive impact on employment.

The Commission also notes that in 2009 the Department of Energy, Labor and Economic Growth (DELEG) conducted a study to determine the size and makeup of Michigan's green economy and the green jobs that support it; findings of the study were published in the *Michigan Green Jobs Report 2009*.<sup>20</sup> The study determined that although the renewable energy production sector made up only nine percent of the green jobs in the state, the renewable energy sector had shown the largest growth rate over the previous three years compared with the other green economy industries defined in the report. In addition, the renewable energy sector has continued to experience rapid growth since the publishing of the 2009 Green Jobs Report. This expansion, much of which is described above, is an indicator that the renewable energy industry will create jobs and can help to expedite the state's economic recovery.

Later in 2011, DELEG will update the original green jobs report as part of a re-assessment every two years to determine the impact of efforts and economic conditions on the

---

<sup>20</sup> [http://www.milmi.org/admin/uploadedPublications/1604\\_GreenReport\\_E.pdf](http://www.milmi.org/admin/uploadedPublications/1604_GreenReport_E.pdf)

green industries in the state. Green jobs hold the potential for workers to earn above average wage rates in an area that Michigan has a strong skilled workforce. In the renewable energy green jobs sector, Michigan has the potential to become a regional leader building on the state's engineering expertise, modernized machining and investment in renewable energy on a going forward basis.

The renewable energy standard is just getting started and early indications are that it will be a tool for growing jobs in Michigan's renewable energy industry. The Commission will continue to monitor data on the impact of the renewable energy standard on employment in Michigan, and expects to be able to provide more detailed information in future annual reports.

### **Impact of Percentage Limits in Section 27(7) on Advanced Cleaner Energy Development**

Section 27(7) of the Act (MCL 460.1027(7)) provides for limits on the amount of Advanced Cleaner Energy Credits a provider may use under the renewable energy standard:

(7) Under subsection (6), energy optimization credits, advanced cleaner energy credits, or a combination thereof shall not be used by a provider to meet more than 10% of the renewable energy credit standards. Advanced cleaner energy from advanced cleaner energy systems in existence on January 1, 2008 shall not be used by a provider to meet more than 70% of this 10% limit. This 10% limit does not apply to advanced cleaner energy credits from plasma arc gasification.

Detroit Edison is the only electric provider with advanced cleaner energy generation during the 2009 reporting period. The Company reported 146,099 ACECs were generated or acquired during 2009. The advanced cleaner energy was generated at the Company's Rouge River 2 and 3 plants using coke-oven gas.

At this stage in the implementation of the renewable energy standard, no electric provider has indicated that the percentage limits in PA 295 Section 27(7) have curtailed advanced cleaner energy production in Michigan.

## **Cost-Effectiveness of Renewable Energy and Energy Optimization Standards**

Section 97 of the Act (MCL 460.1097) requires the following:

(6) By February 15, 2011 and each year thereafter and by September 30, 2015, the commission shall submit to the committees described in subsection (4) a report that evaluates and determines whether this Subpart and Subpart A have each been cost-effective and makes recommendations to the legislature. The report shall be combined with any concurrent report by the commission under section 51.

Section 21 (6)(b) requires each rate-regulated electric provider to determine that the life cycle cost of renewable energy acquired under its REP less the life cycle net savings associated with its Energy Optimization Plans did not exceed the life cycle cost of electricity generated by a new conventional coal-fired facility. Staff worked closely with the electric providers to determine the levelized cost of a new conventional coal fired power facility. This was determined to be \$133/MWh derived from consulting research performed by Consumers Energy as a result of the Company's inquiry into a new 830 MW coal fired power facility and was adopted by all electric providers. Using \$133/MWh for comparison in the analysis required under Section 97(6), **Figure 7** below demonstrates that the Renewable Energy and Energy Optimization programs through 2010 are each cost-effective on their own.

**Figure 7: Cost Effectiveness of Energy Optimization and Renewable Energy Standards**

<b>Cost-Effectiveness of Energy Optimization and Renewable Energy Standards</b>		
	<b>Energy Optimization Life-Cycle Energy Savings</b>	<b>Energy Optimization Cost of Conserved Energy</b>
	<b>(MWh)</b>	<b>(\$/MWh)</b>
<b>Detroit Edison</b>	29,174,774	\$10.90
<b>Consumers Energy</b>	14,436,000	\$18.00
<b>Energy Optimization Cost of Conserved Energy Weighted Average (\$/MWh)</b>		<b>\$13.25</b>
<b>Renewable Energy Weighted Average Cost (\$/MWh)</b>		<b>\$98.68</b>
<b>Combined Weighted Average Cost of Energy Optimization and Renewable Energy (\$/MWh)</b>		<b>\$52.49</b>
<p><b>Source:</b>                      Energy optimization life-cycle energy savings and cost of conserved energy data was provided by Consumers Energy and Detroit Edison in January 2011 to reflect the most current information about the programs.</p> <p>Renewable energy cost data is based on levelized costs provided as part of the renewable energy contract approval process.</p>		

The Energy Optimization cost represented in **Figure 7** is the life cycle levelized cost of conserved energy of the largest electric providers, weighted by the life cycle savings in MWh. The Renewable Energy cost is based on the actual levelized costs of contracts submitted to the Commission for approval to date, weighted by the estimated production in MWh over the life cycle of the agreement. When combined, the cost of both Subpart A and Subpart B of 2008 PA 295 is approximately 40 percent of the cost of a new conventional coal plant. Based on contract pricing trends, Staff anticipates that the cost of Renewable Energy will continue to decline, while Energy Optimization costs will remain relatively flat.

## **Recommendations**

Progress toward the 2012 compliance year and the 10 percent renewable energy standard in 2015 is going smoothly. Michigan's electric providers are on track to meet the 10 percent renewable energy requirement. The renewable energy standard is resulting in the development of new renewable capacity and can be credited with the development of 700 MW of new renewable energy projects since the Act became law. The weighted average price of renewable energy contracts is \$98.68, which is substantially less than forecasted in renewable energy plans and is lower than the cost of new coal-fired plants. Over the next year, as the biennial renewable energy plans are filed, lower prices are expected to be reflected. There are no recommended changes to the Act at this time. The Commission will continue to monitor utility progress toward meeting the requirements of the standards as provided under the Act. When more data is available, but prior to 2015, the Commission intends to review the cost and performance impacts of the renewable energy standard, along with the availability and cost of renewable resources.

**Appendix A - RE Filings: Case Numbers, Companies, Plan Approval Dates and Reconciliation Approval Dates**

	RE Plan Case #	COMPANY	2009 Plan Approval	RE Reconciliation Case #	RE Reconciliation Approval
<b>IOUs</b>					
1	U-15804	Alpena Power Company	5/12/2009	U-16344	1/6/2011
2	U-15805	Consumers Energy Company	5/26/2009	U-16300	Pending
3	U-15806	Detroit Edison Company	6/2/2009	U-16356	Pending
4	U-15807	Edison Sault Electric Company	5/12/2009	U-16304	12/21/2010
5	U-15808	Indiana Michigan Power Company	5/12/2009	U-16308	12/21/2010
6	U-15809	Northern States Power Company-Wisconsin	5/12/2009	U-16312	1/6/2011
7	U-15810	Upper Peninsula Power Company	5/26/2009	U-16316	12/21/2010
8	U-15811	Wisconsin Public Service Corporation	5/26/2009	U-16360	12/21/2010
9	U-15812	Wisconsin Electric Power Company	5/26/2009	Pending-Filing Not Due until 3/31/2011	
<b>Co-ops</b>					
10	U-15813	Alger Delta Cooperative Electric Association	5/12/2009	Not Required-Member Regulated	
11	U-15814	Bayfield Electric Cooperative	6/2/2009	Not Required-Member Regulated	
12	U-15815	Cherryland Electric Cooperative	5/12/2009	Not Required-Member Regulated	
13	U-15816	Cloverland Electric Cooperative	5/12/2009	U-16352	1/20/2011
14	U-15817	Great Lakes Energy Cooperative	5/12/2009	U-16320	12/21/2010
15	U-15818	Midwest Energy Cooperative	5/12/2009	U-16324	12/21/2010
16	U-15819	Ontonagon Co. Rural Electrification Assoc.	5/12/2009	U-16328	12/21/2010
17	U-15820	Presque Isle Electric and Gas Co-op	5/12/2009	U-16332	12/21/2010
18	U-15821	Thumb Electric Cooperative	5/12/2009	U-16336	12/21/2010
19	U-15822	Tri-County Electric Cooperative	5/12/2009	Not Required-Member Regulated	
<b>Municipals</b>					
20	U-15848	Village of Baraga	7/1/2009		
21	U-15849	City of Bay City	7/1/2009		
22	U-15850	City of Charlevoix	7/1/2009		
23	U-15851	Chelsea Department of Electric and Water	7/1/2009		
24	U-15852	Village of Clinton	7/1/2009		
25	U-15853	Coldwater Board of Public Utilities	7/1/2009		
26	U-15854	Croswell Municipal Light & Power Department	7/1/2009		
27	U-15855	City of Crystal Falls	7/1/2009		
28	U-15856	Daggett Electric Department	10/13/2009		
29	U-15857	Detroit Public Lighting Department	7/1/2009		
30	U-15858	City of Dowagiac	7/1/2009		
31	U-15859	City of Eaton Rapids	7/1/2009		
32	U-15860	City of Escanaba	7/1/2009		
33	U-15861	City of Gladstone	7/1/2009		
34	U-15862	Grand Haven Board of Light and Power	7/1/2009		
35	U-15863	City of Harbor Springs	7/1/2009		
36	U-15864	City of Hart Hydro	7/1/2009		
37	U-15865	Hillsdale Board of Public Utilities	7/1/2009		
38	U-15866	Holland Board of Public Works	7/1/2009		
39	U-15867	Village of L'Anse	7/1/2009		
40	U-15868	Lansing Board of Water & Light	7/1/2009		
41	U-15869	Lowell Light and Power	7/1/2009		
42	U-15870	Marquette Board of Light and Power	7/1/2009		
43	U-15871	Marshall Electric Department	7/1/2009		
44	U-15872	Negaunee Department of Public Works	7/1/2009		
45	U-15873	Newberry Water and Light Board	7/1/2009		
46	U-15874	Niles Utility Department	7/1/2009		
47	U-15875	City of Norway	7/1/2009		
48	U-15876	City of Paw Paw	7/1/2009		
49	U-15877	City of Petoskey	7/1/2009		
50	U-15878	City of Portland	7/1/2009		
51	U-15879	City of Sebewaing	7/1/2009		
52	U-15880	City of South Haven	7/1/2009		
53	U-15881	City of St. Louis	7/1/2009		
54	U-15882	City of Stephenson	7/1/2009		
55	U-15883	City of Sturgis	7/1/2009		
56	U-15884	Traverse City Light & Power	7/1/2009		

NR LR = Not Required - License Rescinded  
 NR NSC = Not Required - Not Serving Customers

	RE Plan Case #	COMPANY	2009 Plan Approval	RE Reconciliation Case #	RE Reconciliation Approval
57	U-15885	Union City Electric Department	7/1/2009		
58	U-15886	City of Wakefield	7/1/2009		
59	U-15887	Wyandotte Department of Municipal Service	7/1/2009		
60	U-15888	Zeeland Board of Public Works	7/1/2009		
<b>Alternative Electric Suppliers (AES)</b>					
61	U-15823	Accent Energy Midwest	NR LR		
62	U-15824	American PowerNet Management LP	NR LR		
63	U-15825	BlueStar Energy Services Inc	Pending		
64	U-15826	CMS ERM Michigan LLC	4/16/2009		
65	U-15827	CMS Energy Resource Management	NR NSC		
66	U-15828	Commerce Energy Inc	4/16/2009		
67	U-15829	Constellation NewEnergy Inc	4/16/2009		
68	U-15845	Direct Energy Business LLC	4/16/2009		
69	U-15830	Direct Energy Services LLC	NR NSC		
70	U-15831	Exelon Energy Company	NR NSC		
71	U-15832	FirstEnergy Solutions Corp	4/16/2009		
72	U-16007	Glacial Energy of Illinois	12/16/2009		
73	U-15833	Integrays Energy Services Inc	4/16/2009		
74	U-15834	Liberty Power Delaware	NR NSC		
75	U-15835	Liberty Power Holdings LLC	NR NSC		
76	U-15836	MetroEnergy LLC	NR LR		
77	U-15837	MidAmerican Energy Company	4/16/2009		
78	U-15838	Nordic Marketing LLC	NR NSC		
79	U-15839	Nordic Marketing of Michigan LLC	NR LR		
80	U-15840	PowerOne Corporation	NR NSC		
81	U-15841	Premier Energy Marketing LLC	5/26/2009		
82	U-15842	Quest Energy LLC	4/16/2009		
83	U-15902	The Royal Bank of Scotland plc	NR NSC		
84	U-15843	Sempra Energy Solutions LLC	4/16/2009		
85	U-15844	Spartan Renewable Energy Inc	4/16/2009		
86	U-15846	U.P. Power Marketing LLC	5/26/2009		
87	U-15847	Wolverine Power Marketing Cooperative Inc	4/16/2009		

NR LR = Not Required - License Rescinded  
NR NSC = Not Required - Not Serving Customers

**Appendix B**

Renewable Energy Monthly Surcharge Summary MPSC Rate-Regulated Utilities											
	Case No.	Plan Approved	Residential	General Service	Standard Power, Large Power < 13,200 V	Large Power ≥ 13,200 V Large Industrial, Alt Energy Econ Dev, Special Power Contracts	Outdoor Protective Lighting-100 Watt Street & Highway Lighting	Outdoor Protective Lighting-250 Watt			
<b>Alpena Power</b>	U-15804	5/12/2009	\$3/meter	\$9.10/meter	\$16.58/meter	\$187.50/meter	\$0.37/light		\$1/light		
	Case No.	Plan Approved	Residential	Rate GS & GSD	Rate GP & GPD	Rate GML	Rate GUL and GUL-XL	Rate GU			
<b>Consumers Energy</b>	U-15805	5/26/2009	\$2.50/meter	\$3.70 - \$140/meter	\$15 - \$187.50/meter	\$3 - \$15/meter	\$0.64/luminaire	\$1 - \$13/billed account			
	Case No.	Plan Approved	Residential	Commercial Secondary & Governmental Rates 3.2 % of total bill for unmetered				or	Primary & Industrial Rates		
				0 – 400 kWh/mo	401 - 850 kWh/mo	851 – 1,650 kWh/mo	Above 1,650 kWh/mo	0 – 11,500 kWh/mo	11,501 – 41,500 kWh/mo	Above 41,500 kWh/mo	
<b>Detroit Edison</b>	U-15806	6/2/2009	\$3/meter or 3.8% of total bill for unmetered	\$4/meter	\$8/meter	\$12/meter	\$16.58/meter	\$16.58/meter	\$140/meter	\$187.50/meter	
	Case No.	Plan Approved	Residential	Rates	Rates						
			Rg 1, Rg 2	Cg 1, Cg 2 Cg 3, Cg3C, Cg 5	Cp 1, Cp 2, Cp 3, Cp 4, A, Cp LC						
<b>We Energies</b>	U-15812	5/26/2009	\$0.09863/ meter- day or approx \$3/mo	\$0.54509/ meter-day or approx \$16.57/mo	\$6.16438/ meter-day or approx \$187.40/mo						
<b>Total Surcharges Collected</b>											
<b>Alpena Power</b>		<b>\$276,994</b>									
<b>Consumers Energy</b>		<b>\$25,648,863</b>									
<b>Detroit Edison</b>		<b>\$34,124,849</b>									
<b>Total</b>		<b>\$60,050,706</b>									



**SURCHARGES**  
 (continued from Sheet No. D-4.01)

<u>Rate Schedule</u>	<u>Renewable Energy Surchage Effective September 2009 Bill Month</u>	<u>Energy Optimization Surchage Effective January 2011 Bill Month</u>
Residential	\$3.00/meter/month	\$0.00186/kWh
General Service	\$9.10/meter/month	\$1.93/meter/month
Standard Power	\$16.58/meter/month	\$27.20/meter/month
Large Power (less than 13,200 volts)	\$16.58/meter/month	\$219.30/meter/month
Large Power (13,200 volts or higher)	\$187.50/meter/month	\$219.30/meter/month
Large Industrial (13,200 volts or lower)	\$187.50/meter/month	\$880.83/meter/month
Large Industrial (higher than 13,200 volts)	\$187.50/meter/month	\$262.50/meter/month
Alternative Energy Economic Development	\$187.50/meter/month	\$145.00/meter/month
Outdoor Protective Lighting (100 watt)	\$0.37/light/month	\$0.18/light/month
Outdoor Protective Lighting (250 watt)	\$1.00/light/month	\$0.31/light/month
Street & Highway Lighting	\$0.37/light/month	\$0.17/light/month
Special Power Contracts	\$187.50/meter/month	\$306.83/meter/month

Issued December 21, 2010 by  
 Ann K. Burton, President  
 Alpena, MI 49707



Effective for bills rendered on  
 and after January 1, 2011

Issued under authority of the  
 Michigan Public Service Commission  
 dated July 13, 2010, in Case No.  
 U-16346

**SURCHARGES**

<b>Rate Schedule</b>	<b>Renewable Energy Plan Surcharge (Case No. U-15805) Effective for September 2009 Bill Month</b>	<b>Energy Optimization Electric Program Surcharge (Case Nos. U-15805 and U-16412) Effective beginning the June 2009 Bill Month</b>	<b>Energy Optimization Self-Directed Customer Surcharge (Case Nos. U-15805 and U-16412) Effective beginning the June 2009 Bill Month<sup>(2)</sup></b>
Residential Rates	\$ 2.50/billing meter	\$0.001982/kWh	NA
Rate GS and GSD <sup>(1)</sup>			
Tier 1: 0 – 1,250 kWh/mo.			
Commercial	\$ 3.70/billing meter	\$ 1.14/billing meter	\$ 0.05/billing meter
Industrial	\$ 4.00/billing meter	\$ 1.14/billing meter	\$ 0.05/billing meter
Tier 2: 1,251 – 5,000 kWh/mo.			
Commercial	\$ 14.00/billing meter	\$ 6.43/billing meter	\$ 0.26/billing meter
Industrial	\$ 15.00/billing meter	\$ 6.43/billing meter	\$ 0.26/billing meter
Tier 3: 5,001 – 30,000 kWh/mo.			
Commercial	\$ 16.58/billing meter	\$ 38.43/billing meter	\$ 1.58/billing meter
Industrial	\$140.00/billing meter	\$ 38.43/billing meter	\$ 1.58/billing meter
Tier 4: 30,001 – 50,000 kWh/mo.			
Commercial	\$ 16.58/billing meter	\$ 38.43/billing meter	\$ 1.58/billing meter
Industrial	\$140.00/billing meter	\$ 38.43/billing meter	\$ 1.58/billing meter
Tier 5: > 50,000 kWh/mo.			
Commercial	\$ 16.58/billing meter	\$ 38.43/billing meter	\$ 1.58/billing meter
Industrial	\$140.00/billing meter	\$ 38.43/billing meter	\$ 1.58/billing meter
Rate GP and GPD <sup>(1)</sup>			
Tier 1: 0 – 5,000 kWh/mo.	\$ 15.00/billing meter	\$ 3.23/billing meter	\$ 0.13/billing meter
Tier 2: 5,001 – 10,000 kWh/mo.	\$187.50/billing meter	\$ 24.27/billing meter	\$ 0.98/billing meter
Tier 3: 10,001 – 30,000 kWh/mo.	\$187.50/billing meter	\$ 61.03/billing meter	\$ 2.51/billing meter
Tier 4: 30,001 – 50,000 kWh/mo.	\$187.50/billing meter	\$132.50/billing meter	\$ 5.43/billing meter
Tier 5: > 50,000 kWh/mo.	\$187.50/billing meter	\$607.75/billing meter	\$26.18/billing meter
Rate E-1	NA	NA	NA
Rate GSG-1, GSG-2	NA	NA	NA
Rate GML			
Tier 1: 0 – 1,250 kWh/mo.	\$ 3.00/billing meter	NA	NA
Tier 2: 1,251 – 5,000 kWh/mo.	\$ 9.00/billing meter	NA	NA
Tier 3: >5,000 kWh/mo.	\$ 15.00/billing meter	NA	NA
Rate GUL	\$ 0.64/luminaire	NA	NA
Rate GU-XL	\$ 0.64/luminaire	NA	NA
Rate GU			
Tier 1: 0 – 1,250 kWh/mo.	\$ 1.00/billed account	NA	NA
Tier 2: 1,251 – 5,000 kWh/mo.	\$ 7.00/billed account	NA	NA
Tier 3: >5,000 kWh/mo.	\$ 13.00/billed account	NA	NA
Rate PA	NA	NA	NA
Rate ROA-R, ROA-S, ROA-P	NA	As in Delivery Rate Schedule	As in Delivery Rate Schedule

All Surcharges shall be applied on a monthly basis. The customer's consumption will be reviewed annually in the January bill month. Following the annual review, the customer may be subsequently moved to the Surcharge level for their applicable rate for the next billing period based on the customer's average consumption for the previous year. In situations where no historical consumption is available, the monthly Surcharge level will be based on the lowest consumption category for the secondary rate schedules or the lowest consumption category for primary rate schedules. No retroactive adjustment will be made due to the application of the REP or EO Surcharges associated with increases or decreases in consumption.

- (1) Customers taking the Municipal Pumping Service Provision shall be excluded from the Renewable Energy Plan Surcharge.
- (2) An eligible customer who files and implements a self-directed plan in compliance with Rule C12 is required to pay the Energy Optimization Self-Directed Program Surcharge.

Issued December 13, 2010 by  
**J. G. Russell,**  
 President and Chief Executive Officer,  
 Jackson, Michigan



Effective for bills rendered on and after  
 the Company's January 2011 Billing Month  
 Issued under authority of the  
 Michigan Public Service Commission  
 dated December 2, 2010  
 in Case No. U-16412

(Continued from [Sheet No. C-72.00](#))

**C8 SURCHARGES AND CREDITS APPLICABLE TO POWER SUPPLY SERVICE (CONTD)**

**C8.4 Renewable Energy Plan Surcharge (REPS) (Contd)**

**Residential Rate Schedule:**

**Metered Service \$3.00 per meter per month**

**Commercial Secondary and Governmental Rate Schedules:**

**Metered Service**

<b>Monthly Consumption</b>	<b>Customer Surcharge</b>
<b>0 – 400 kWh per month</b>	<b>\$4.00 per meter per month</b>
<b>401 – 850 kWh per month</b>	<b>\$8.00 per meter per month</b>
<b>851 – 1,650 kWh per month</b>	<b>\$12.00 per meter per month</b>
<b>Above 1,650 kWh per month</b>	<b>\$16.58 per meter per month</b>

**Primary & Industrial Rate Schedules:**

**Metered Service**

<b>Monthly Consumption</b>	<b>Customer Surcharge</b>
<b>0 – 11,500 kWh per month</b>	<b>\$16.58 per meter per month</b>
<b>11,501 – 41,500 kWh per month</b>	<b>\$140.00 per meter per month</b>
<b>Above 41,500 kWh per month</b>	<b>\$187.50 per meter per month</b>

**Notes:**

- (1) The REPS does not apply to Secondary Pumping Rate E5.**
- (2) The REPS will not be applied to additional meters at a single site that were installed specifically to support interruptible air conditioning, interruptible water heating, net metering, or time-of-day tariffs.**

(Continued on [Sheet No. C-73.00](#))

Issued August 28, 2009  
D. G. Brudzynski  
Vice President  
Regulatory Affairs  
  
Detroit, Michigan

Michigan Public Service Commission
<b>August 31, 2009</b>
Filed <u>RL</u>

Effective for bills rendered on  
and after September 1, 2009

Issued under authority of the  
Michigan Public Service Commission  
dated June 2, 2009  
In Case No. U-15806

**RENEWABLE ENERGY SURCHARGE**

The following rate schedules shall receive a Power Supply Renewable Energy Surcharge per meter\*, per day, as indicated below.

<u>RATE SCHEDULE</u>	<u>RATE</u>
Rg 1	\$0.09863
Rg 2	\$0.09863
Cg 1	\$0.54509
Cg 2	\$0.54509
Cg 3	\$0.54509
Cg3C	\$0.54509
Cg 5	\$0.54509
Cp 1	\$6.16438
Cp 2	\$6.16438
Cp 3	\$6.16438
Cp 4	\$6.16438
A	\$6.16438
Cp LC	\$6.16438

\* Company assumes one meter per service.

The following rate schedules shall receive a Renewable Energy Surcharge as indicated above consistent with the rate schedule under which the customer is served. The Renewable Energy Surcharge is not prorated based on the level of participation selected under rate schedules ERER1, ERER2 or ERER3.

RATE SCHEDULE

ERER1  
ERER2  
ERER3  
Ds1

CGS Category 1 (only when a net purchaser from the Company)

Issued *July 1, 2010*  
R.A. Draba  
Vice-President,  
Milwaukee, Wisconsin



Effective for service rendered on and  
after *July 2, 2010*

Issued under authority of the  
Michigan Public Service Commission  
dated *July 1, 2010*  
in Case No. *U-15981*

## Appendix C

### ELECTRIC PROVIDER RENEWABLE ENERGY ANNUAL REPORT DATA SUMMARY

Prepared by Michigan Public Service Commission Staff

(Alternative Electric Suppliers Data Not Included)

2009 Calendar Year

Company Name	Retail Sales Projected 2011 Weather Normalized or Projected 2009 - 2011 Average (MWh)	Total Available RECs Estimate (RECs)	Renewable Energy Percentage Estimate (%)	2009 Actual Expenditures	2010 Anticipated Expenditures
<b>Investor Owned Utilities:</b>					
Alpena Power Company	321,101	12,325	3.84%	279,000	837,000
Consumers Energy Company	33,216,452	1,559,941	4.70%	2,220,000	12,934,000
Detroit Edison Company	43,889,000	1,094,930	2.49%	2,788,600	4,521,300
Edison Sault Electric Co (Cloverland)***	623,563	219,243	35.16%	0	0
Indiana Michigan Power Company	3,567,000	54,907	1.54%	0	0
Northern States Power Company	136,260	12,428	9.12%	0	0
Upper Peninsula Power Company	823,659	41,970	5.10%	0	0
Wisconsin Public Service Corporation	287,730	15,117	5.25%	0	92,276
Wisconsin Electric Power Co	2,463,558	63,403	2.57%	0	0
	<b>85,328,323</b>	<b>3,074,264</b>	<b>3.60%</b>	<b>5,287,600</b>	<b>18,384,576</b>
<b>Cooperatives:</b>					
Bayfield Electric Cooperative	Not Reported				
Cloverland Electric Cooperative***	204,045	95,842	46.97%	0	0
Great Lakes Energy Cooperative	1,352,722	18,035	1.33%	0	0
Midwest Energy Cooperative	582,307	0	0.00%	0	0
Ontonagon County Rural Electrification Association	25,910	2,608	10.07%	0	0
Presque Isle Electric and Gas Co-op	241,165	3,215	1.33%	0	0
Thumb Electric Cooperative	161,406	1,775	1.10%	0	0
	<b>2,567,555</b>	<b>121,475</b>	<b>4.73%</b>	<b>0</b>	<b>0</b>
<b>Member Regulated Electric Cooperatives:</b>					
Alger Delta Cooperative Electric Association*	58,452	43,418	74.28%	0	0
Cherryland Electric Cooperative	368,614	4,915	1.33%	0	0
Homeworks Tri-County Electric Cooperative	321,025	4,280	1.33%	0	0
	<b>748,091</b>	<b>52,613</b>	<b>7.03%</b>	<b>0</b>	<b>0</b>
<b>Municipally-Owned Electric Utilities:</b>					
City of Bay City	318,929	0	0.00%	0	0
City of Charlevoix	63,290	0	0.00%	0	0
City of Crystal Falls	16,342	6,539	40.01%	0	0
City of Dowagiac	72,334	0	0.00%	7,146	7,360
City of Eaton Rapids	85,451	2,458	2.88%	0	3,087
City of Escanaba	140,801	0	0.00%	0	0
City of Gladstone*	31,753	32,973	103.84%	0	0
City of Harbor Springs	37,594	0	0.00%	0	0
City of Hart Hydro	36,050	1,066	2.96%	0	0
City of Norway	29,626	33,843	114.23%	0	0
City of Paw Paw	385,036	0	0.00%	2,505	2,580
City of Petoskey	109,865	0	0.00%	0	0
City of Portland	34,783	1,166	3.35%	0	0
City of Sebewaing	42,284	0	0.00%	0	0
City of South Haven	139,629	0	0.00%	7,719	7,951
City of St. Louis	38,140	708	1.86%	0	0
City of Stephenson	7,092	414	5.84%	0	0
City of Sturgis	238,029	0	0.00%	12,051	12,412
City of Wakefield	13,038	1,146	8.79%	0	0
Chelsea Dept of Electric & Water	88,548	0	0.00%	0	2,844
Coldwater Board of Public Utilities**	269,215	1,861	0.69%	0	0
Croswell Municipal Light & Power Dept	72,334	0	0.00%	0	0
Daggett Electric Dept	1,428	83	5.81%	0	0
Detroit Public Lighting Dept****	514,811	0	0.00%	13,927	15,000
Grand Haven Board of Light & Power	271,746	0	0.00%	0	19,393
Hillsdale Board of Public Utilities**	128,576	889	0.69%	0	0
Holland Board of Public Works	980,188	18,977	1.94%	*****	*****
Lansing Board of Water & Light	2,205,471	81,127	3.68%	5,548,421	6,152,014
Lowell Light & Power	63,152	0	0.00%	0	0
Marquette Board of Light & Power	307,455	6,763	2.20%	0	0
Marshall Electric Dept**	101,976	705	0.69%	0	0
Negaunee Dept of Public Works*	21,803	23,367	107.17%	0	0
Newberry Water & Light Board	21,301	5,236	24.58%	0	0
Niles Utility Dept	139,629	0	0.00%	7,529	7,755
Traverse City Light & Power	318,846	484	0.15%	0	0
Union City Electric Dept**	14,383	99	0.69%	0	0
Wyandotte Dept of Municipal Service	253,415	0	0.00%	0	0
Village of Baraga*	17,975	21,700	120.72%	0	0
Village of Clinton**	20,977	145	0.69%	0	0
Village of L'Anse*	13,474	15,345	113.89%	0	0
Zeeland Board of Public Works	300,070	1,660	0.55%	0	0
	<b>7,966,839</b>	<b>258,753</b>	<b>3.25%</b>	<b>5,599,298</b>	<b>6,230,396</b>



# Appendix D

EO Surcharges by Company																		
Electric Coops	Case No.	Plan Approved	Group															
<b>Alger Delta Coop Elec</b>	<b>U-15813</b>	<b>5/12/2009</b>	<b>MECA</b>	Farm and Home (A)	Seasonal Residential (AS)	Combined Residential	Commercial & Small Power (B)	Large Power (LP)										
Rate				0.00218 \$/kwh			\$1.97	\$35.48										
<b>Cherryland Elec Coop</b>	<b>U-15815</b>	<b>5/12/2009</b>	<b>Independent</b>	Farm and Home (A)	Seasonal Residential (A-S)	Combined Residential	General Service (C)	Optional Irrigation TOD (OTD)	Large Power (LP)	Optional Large Power TOD (LPTOD)	Large Commercial & Industrial (LC&I)	Primary Substation (PSDS)						
Rate				0.00143 \$/kwh			\$1.64		\$26.36		\$247.81	\$497.36						
<b>Cloverland Electric Coop.</b>	<b>U-15816</b>	<b>5/12/2009</b>	<b>MECA</b>	Farm and Home (FH) (ES)	Seasonal Residential (SR)	Combined Residential	General Service (GS)	Seasonal General Service (SG)	Commercial Heating and A/C (HA)	Large Power (LP)	Large Power Mining (LP-MO)	Primary Service (PSDS)						
Rate				\$0.00139			\$1.53			\$54.92								
<b>Great Lakes Energy Coop</b>	<b>U-15817</b>	<b>5/12/2009</b>	<b>MECA</b>	Residential (A)	Seasonal Residential (AS)	Combined Residential	General Service (GS)	Large Power (LP)	C&I APM (C-APM)	C&I APM (D-APM)	Primary Service (PSDS)							
Rate				0.00158 \$/kwh			\$2.85			\$533.14								
<b>Midwest Energy Coop</b>	<b>U-15818</b>	<b>5/12/2009</b>	<b>MECA</b>	Farm and Home Service (A) \$/kwh	Int Duel Heating (I-DSH)	Combined Residential	General Service (GS)	Irrigation (IRR)	Large Power Service (LP)	Large Power >200 kW (CD-1)	Large Power Primary & Contracts (LPPS)							
Rate				\$1.25	\$0.56	\$1.24	\$1.34	\$3.34	\$31.39	\$196.03	\$1,416.58							
<b>Ontonagon County Rural Elec.</b>	<b>U-15819</b>	<b>5/12/2009</b>	<b>MECA</b>	Residential (A, AH)	Seasonal Residential (A-S)	Combined Residential	General Service (B)	Large Power (LP)	Large Power (LP-1)									
Rate				0.00242 \$/kwh			\$2.26	\$14.93	\$77.70									
<b>Presque Isle Elec &amp; Coop</b>	<b>U-15820</b>	<b>5/12/2009</b>	<b>MECA</b>	Residential (A)	Seasonal Residential (AS)	Combined Residential	General Service (GS)	Large General Service (LG and LPTOD)	Primary Service (PSDS)									
Rate				0.00164 \$/kwh			\$2.68	\$45.73	\$430.87									
<b>Thumb Elec. Coop</b>	<b>U-15821</b>	<b>5/12/2009</b>	<b>MECA</b>	Farm and Home (A)	Seasonal Residential (A-S)	Combined Residential	General Service (GS)	Large General Service (LGS)	Large Power Dist. Substation (LPDS)	General Service TOD (GS-TOD)	Seasonal General Service (SGS)							
Rate				0.00133 \$/kwh			\$2.07	\$118.35	\$167.00	\$1.89	\$0.63							
<b>Tri-County Elec. Coop/Homeworks</b>	<b>U-15822</b>	<b>5/12/2009</b>	<b>MECA</b>	Farm and Home Service (A) \$/kwh	General Service	Irrigation TOD Service	Large Power Service (CD)	Large Power TOD Service (CD-1)	Primary Service (PSDS)									
Rate				\$0.00149	\$1.29	\$15.67	\$30.21	\$29.43	\$889.24									

Electric IOUs																	
<b>Alpena Power*</b>	<b>U-15804</b>	<b>5/12/2009</b>	<b>EU</b>	Residential \$/kwh	General Service	Standard	Large Power	Large Power	Large Industrial below 13 kV	Large Industrial above 13 kV	Alt Energy Econ Dev	Outdoor Protective Lighting 100 watt	Outdoor Protective Lighting 250 watt	Street & Highway	Special Contract		
New 2010 Rate				\$0.00136	\$1.3835	\$22.3575	\$196.95	\$196.95	same	\$802.68	\$324.92	\$0.144	\$0.2284	\$0.135	\$575.41		
2009 Rate				\$0.0013	\$1.33	\$18.83	\$162.72	\$162.72	\$573.50	\$2,744.32	same	\$0.13	\$0.23	\$0.12	\$3,775.03		
<b>Consumers Energy*</b>	<b>U-15805</b>	<b>5/26/2009</b>	<b>Independent</b>	Residential \$/kwh	Secondary 0-1250 kwh	Secondary 1251-5000 kwh	Secondary 30000 kwh	Secondary 5001-30001-50000 kwh	Secondary Above 50000 kwh	Primary 0-5000 kwh	Primary 5001-10000 kwh	Primary 10001-30000 kwh	Primary 30001-50000 kwh	Primary above 50000 kwh			
New 2010 Proposed Rate**				\$0.00143	\$0.96	\$5.38	\$32.27	\$32.27	\$32.27	\$2.99	\$22.84	\$57.04	\$113.51	\$629.08			
2009 Rate														\$422.23			
<b>Detroit Edison*</b>	<b>U-15806</b>	<b>6/2/2009</b>	<b>Independent</b>	Residential \$/kwh	Secondary - 850 kWh/mo	Secondary 851-1650 kWh/mo	Sec Above 1650 kWh/mo	Primary 0 - 11500 kwh/mo	Primary Above 11501 kWh/mo								
New 2010 Rate				\$0.00243	\$0.26	\$1.59	\$6.88	\$19.63	\$203.06								
2009 Rate				\$0.00108	\$0.24	\$1.42	\$6.16	\$28.32	\$283.32								
<b>Edison Sault</b>	<b>U-15807</b>	<b>5/12/2009</b>	<b>EU</b>	Residential \$/kwh	Small Commercial	Large Commercial	Industrial	Industrial TOD	Outdoor Lighting	Street Lighting							
Rate				\$0.001168	\$3.40	\$118.65	\$423.16	\$937.02	\$0.11	\$0.12							
<b>Indiana Michigan*</b>	<b>U-15808</b>	<b>5/12/2009</b>	<b>EU</b>	Residential \$/kwh	C&I SGS	C&I SEC MGS TOD	C&I MGS PRI WSS PRI	C&I LGS SEC LGS PRI	C&I MS	C&I WSS SEC	C&I LP PRI SUB	C&I LP Tran	C&I QP PRI	C&I QP SUB			
New 2010 Rate				\$0.00085	\$2.68	\$2.68	\$2.68	\$154.21	\$2.68	\$2.68	\$154.21	\$154.21	\$154.21	\$154.21			
2009 Rate				\$0.00081	\$2.76	\$2.76	\$2.76	\$157.39	\$2.76	\$2.76	\$157.39	\$157.39	\$157.39	\$157.39			
<b>NSP-Wisc (Elec.)</b>	<b>U-15809</b>	<b>5/12/2009</b>	<b>EU</b>	Residential CO1,2 \$/kwh	Small Commercial C9,10,	Commercial C11 TOD	Commercial C12, 21	Industrial C13,20 sec	Industrial C20 trans	Lighting CO4, 30	Muni Pump Service						
Rate				\$0.0013	\$1.48	\$1.48	\$14.15	\$92.51	\$1,020.87	\$0.13	\$1.48						
<b>Wisc. Elec Power Co*</b>	<b>U-15812</b>	<b>5/26/2009</b>	<b>EU</b>	Residential \$/kwh	Cg1	Cg2	Cg3 & Cg3C	Cg5	Cp1	Cp2, Cp3 & Cp4	Schedule A	Spec Con (CpLC)	Mg1	Unmetered lamps GI1	Unmetered lamps Ms21	Unmetered lamps Ms3	LED1
New 2010 Rate				\$0.00134	\$0.10642	\$0.19486	\$2.05980	\$0.16619	\$9.49678	\$41.37339	\$511.14649	\$1,325.02526	\$0.050	\$0.08-0.45	\$0.06-0.45	\$0.06-1.13	\$0.00321
2009 Rate				\$0.00130	\$0.10113	\$0.18515	\$2.21664	\$0.18413	\$9.56129	\$71.08290	\$502.85126	\$1,055.49909	\$0.03692	.05-.40	.05-.40	.05-.40	n/a
<b>Wisc. PSC (Elec)</b>	<b>U-15811</b>	<b>5/26/2009</b>	<b>EU</b>	Residential RG1, RG1T, RG2, RG2T \$/kwh	Small Comm CG1MI, CG1TMI, CG2MI, CG2TMI	Small Comm Cg1M seasonal, Cg24m seasonal, Cg-OTOU1M seasonal	Medium Comm Cg3M, Cg4M, Mp1M	Medium Comm Cg3M seasonal, Cg4M seasonal	Large C&I PG3, PG2, NatR, NatF	Lighting, MS3, MS1, GY3, GY1							
Rate				\$0.0013	\$2.13	\$4.26	\$27.58	\$55.16	\$256.05	\$0.14							
<b>Upper Peninsula Power</b>	<b>U-15810</b>	<b>5/26/2009</b>	<b>EU</b>	Residential A1,2,AH1,2 \$/kwh	Small Comm C1,1W, 2,2W,H1,2	Medium Commercial P1,2	Lg Commercial CPI, ERER, SCH A, UGDS, UT1, CPRRMi, RTMPMI, WP1D, WP1T, WP2, WP3	Lighting SL, Z	Special Contract								
Rate				\$0.0021	\$2.47	\$27.67	\$442.82	\$0.18	\$632.32								



Natural Gas IOUs																
<b>Consumers Energy Gas</b>	<b>U-15889</b>	<b>5/26/2009</b>	<b>Independent</b>	Residential (Ccf)	General Service (0-100,000 Mcf)	General Service (Above 100,000 Mcf)	Transportation (0-100,000 Mcf)	Transportation (Above 100,000 Mcf)								
Rate				\$0.01722	\$0.1588	\$0.0053	\$0.1588	\$0.0053								
<b>MichCon Gas</b>	<b>U-15890</b>	<b>6/2/2009</b>	<b>Independent</b>	Residential A, AS (Ccf)	Residential 2A,GS1 (Ccf)	Large Volume <100,000 Mcf per Ccf	Large Volume >100,000 per Ccf	School, per Ccf	Small Volume Transport per Ccf	Large, Extra Large Volume Transport per Ccf						
Rate				\$0.0088	\$0.0116	\$0.0116	\$0.0007	\$0.0116	\$0.0007	\$0.0007						
<b>MGU*</b>	<b>U-15891</b>	<b>5/26/2009</b>	<b>EU</b>	Residential (Ccf)	Multi-Family	Sm General Service	Lg General Service	Commercial Lighting	Special Contracts	Transportation, TR-1	Transportation, TR-2	Transportation, TR-3				
New 2010 Rate				\$0.01544		\$4.41	\$98.76	\$7.77	\$136.94	\$26.82	\$76.40	\$349.37				
2009 Rate				\$0.0124		\$3.82	\$77.09	\$4.70	\$111.12	\$18.66	\$50.81	\$114.61				
<b>NSP-Wisc</b>	<b>U-15892</b>	<b>5/12/2009</b>	<b>EU</b>	Residential \$/therm	C&I 302 /meter	C&I 303 /meter	C&I 304 /meter	C&I Transportation /meter								
Rate				\$0.0145	\$5.02	\$86.39	\$468.79	\$5.02								
<b>SEMCO Energy*</b>	<b>U-15893</b>	<b>5/26/2009</b>	<b>EU</b>	Residential (Ccf)	GS-1	GS-2	GS-3	TR-1	TR-2	TR-3						
New 2010 Rate				\$0.01778	\$2.41	\$13.26	\$67.23	\$26.84	\$89.70	\$313.58						
2009 Rate				\$0.0152	\$2.41	\$13.94	\$66.09	\$30.56	\$93.98	\$197.26						
<b>Wisc. PSC (Gas)</b>	<b>U-15894</b>	<b>5/26/2009</b>	<b>EU</b>	Residential \$/Therm	C&I small	C&I small seasonal	C&I large	Tran medium	Transport Large	Transport Super Large						
New 2010 Rate				\$0.0159	\$2.22	\$4.44	\$25.64	-----	\$12.75	\$311.17						
2009 Rate				\$0.0140	\$2.14	\$4.28	\$30.09	-----	\$11.45	\$105.33						

## Appendix E: Request for Proposals/Requests for Information/Pre-Qualifications from Detroit Edison and Consumers Energy

Consumers Energy : Request for Proposals/Requests for Information/Pre-Qualifications						
Issue Date	Type	Description	Requested Capacity	Company Owned	Applicable Technology*	Responses
7/23/2010	RFP	Requested bids for the Installation of a Utility Owned Wind Farm	100 MW by 2012	Yes	Wind	7 Proposals
1/15/2010	RFP	Requested bids for Utility Owned Wind Turbines				11 Proposals/ 4 Suppliers
7/27/2009	RFP	Requested Substation Transformer Bids for Utility Owned Wind Farm				4 Proposals
2/19/2010	RFQ	Request for Qualifications for the Installation of a 100 MW Utility Owned Wind Farm	N/A	Yes	Wind	8 Recipients
7/14/2010	RFQ	Request for Qualifications for 100 MWs of Utility Owned Wind Turbines	N/A	Yes	Wind	8 Recipients
5/7/2009	RFP	Requested CEREC**	100 MW by 2012 / 150 MW by 2014	No	All	80 Proposals
1/29/2009	RFP	Requested CEREC**	17.4 MW	No	All	12 Proposals/ 11 Suppliers
Detroit Edison Company : Request for Proposals/Requests for Information/Pre-Qualifications						
Issue Date	Type	Description	Requested Capacity	Company Owned	Applicable Technology*	Responses
11/18/2010	RFP	Requested CEREC**	245 MW by 12/31/2014	No	All	In Progress
7/26/2010	Pre-Q	Pre-qualification for 100-200 MW of Utility Owned Wind Turbines	N/A	Yes	Wind	In Progress
3/29/2010	SOI	Solicitation of Interest to Host Utility Owned Solar at the Customers Location	N/A	Yes	Solar	10 Responses
11/23/2009	RFP	Requested bids for the Installation of Utility Owned Solar	3 MW	Yes	Solar	11 Proposals
10/23/2009	Pre-Q	Pre-Qualification for the Installation of 3 MW of Utility Owned Solar	N/A	Yes	Solar	30 Responses
8/18/2009	RFP	Joint Development for Utility Owned Wind	75 MW by 12/31/2011	Yes	Wind	12 Proposals/ 9 Suppliers
8/18/2009	RFP	Requested CEREC**	106 MW by 12/31/2011	No	All	35 Proposals/ 21 Suppliers
5/22/2009	RFI	Request for Information for the Joint Development of Wind Farms	N/A	Yes	Wind	155 Registered 27 Responses
12/23/2008	RFP	Requested RECs* and ACECs* Without the Associated Energy	250,000 RECs*/Year	No	All	43 Proposals/ 11 Suppliers

\* All=Any Renewable Energy Resource defined by 2008 PA 295; REC=Renewable Energy Credit; ACEC=Advanced Cleaner Energy Credit

\*\* CEREC=Capacity, Energy, and Renewable Energy Attributes

## Appendix F

### Consumers Energy Company's Renewable Energy Contracts Submitted to the MPSC for Approval.

Consumers Energy : Contracts								
Map Key	Seller	Quantity	Cost*	Term	Renewable Energy Type	Request for Proposal	Commission Approval	Commercial Operation Date
1	Vestas-American Wind Technology	56 V100 1.8 MW Turbines	The combined average price of \$95.00/MWh	Company Owned	Wind	1/15/2010	12/2/2010	12/31/2012
	White Construction, Inc.	Installation and construction of wind farm		Company Owned	Wind	7/23/2010	12/2/2010	12/31/2012
	GE Prolec Transformers, Inc.	2 - 125 KV transformers		Company Owned	Wind	7/27/2009	12/2/2010	12/31/2012
2	Heritage Garden Wind Farm I	28.6 MW	\$106.20 MWh	20 Years	Wind	Unsolicited	11/19/2010	1/1/2012
3	Heritage Stoney Corners Wind Farm II	12.3 MW	\$98.50 MWh	20 Years	Wind	Unsolicited	11/19/2010	1/1/2012
4	Experimental Advanced Renewable Program	Commercial 836.6 KW Residential 200.1 KW	Commercial \$0.45/KWh Residential \$0.65/KWh	12 Years	Solar	Unsolicited	12/21/2010	5/1/2010
5	Scenic View Dairy**	0.35 MW	\$83.07/MWh	63 Months	Anaerobic	Unsolicited	10/26/2010	7/29/2010
6	Blissfield Wind	81 MW	\$100.88/MWh	20 Years	Wind	5/7/2009	7/27/2010	12/31/2012
7	Harvest II Wind	59.4 MW	\$98.38/MWh	20 Years	Wind	5/7/2009	7/27/2010	12/31/2012
8	Michigan Wind 2	90 MW	\$94.00/MWh	20 Years	Wind	5/7/2009	7/27/2010	6/30/2012
9	WM Renewable Energy - Pine Tree Acres	12.8 MW	\$98.75/MWh	20 Years	Landfill Gas	5/7/2009	7/27/2010	6/30/2012
10	WM Renewable Energy - Northern Oaks Landfill	1.6 MW	\$126.32/MWh	20 Years	Landfill Gas	1/29/2009	10/13/2009	11/11/2010
11	NANR - Lennon	1.6 MW	\$137.75/MWh	20 Years	Landfill Gas	1/29/2009	10/13/2009	12/31/2010
12	Elk Rapids Hydro Electric**	0.7 MW	\$143.50/MWh	10 Years	Hydro	1/29/2009	10/13/2009	7/11/2009
13	Zeeland**	1.6 MW	\$147.28/MWh	7 Years	Landfill Gas	1/29/2009	10/13/2009	7/11/2009
14	Freemont Community Digester	3.1 MW	\$140.80/MWh	20 Years	Anaerobic	1/29/2009	10/13/2009	11/11/2012
15	Scenic View Dairy**	0.82 MW	\$160.56/MWh	7 Years	Anaerobic	1/29/2009	10/13/2009	7/11/2009
	<b>Total</b>	<b>396 MW</b>						
* Per MWh prices represent levelized costs.								
** Pre-existing projects prior to 2008 PA 295 - The commercial operation date would refer to the effective date of the contract.								

**Detroit Edison Company's Renewable Energy Contracts Submitted to the MPSC for Approval.**

Detroit Edison Company : Contracts								
Map Key	Seller	Quantity	Cost*	Term	Renewable Energy Type	Request for Proposal	Commission Approval	Commercial Operation Date
16	Nova Consultants	Unchanged from original contract	Unchanged from original contract	Company Owned	Solar	Extension	12/21/2010	12/31/2011
17	Blue Water Renewables - Smiths Creek Landfill	3.2 MW	\$99.00/MWh	20 Years	Landfill	Unsolicited	1/20/2011	12/31/2011
18	Gratiot County Wind	110.4 MW	\$94.43/MWh	20 Years	Wind	8/18/2009	9/14/2010	12/1/2011
		89.6 MW Company Owned	Price not available	Company Owned				
19	WM Renewable Energy - Eagle Valley Landfill	3.2 MW	Combined average price of \$98.94/MWh	20 years	Landfill	8/18/2009	8/10/2010	6/1/2011
20	L'Anse Warden Electric Company	17 MW		20 years	Biomass	8/18/2009	8/10/2010	7/1/2010
21	Boyce Hydro**	Firm 210,000 RECs w/additional 112,000 RECs dependent on generation		\$7.75/ REC	7 Years	Hydro	12/23/2009	4/27/2010
16	Nova Consultants	Up to 3 MW	Up to \$18 Million	Company Owned	Solar	11/23/2009	3/2/2010	12/31/2010
22	Heritage Sustainable Energy Stoney Corners Wind Farm	12.2 MW	Unchanged from original contract	20 Years	Wind	Unsolicited	12/1/2009	1/31/2011
23	UPPCO**	Firm 500,000 RECs	Combined average price of \$12.46/REC	7 Years	Hydro	12/23/2009	12/1/2009	10/1/2009
Not Shown	Sterling Planet**	Firm 2,500,000 RECs		10 Years	MISC	12/23/2009	12/1/2009	10/1/2009
22	Heritage Sustainable Energy Stoney Corners Wind Farm	14 MW	\$115.00/MWh	20 Years	Wind	Unsolicited	4/30/2009	12/21/2009
	<b>Total</b>	<b>252 MW</b>						
* Per MWh prices represent levelized costs.								
** Pre-existing projects prior to 2008 PA 295 - The commercial operation date would refer to the effective date of the contract.								

**Contracts Submitted to the Commission Exclusive from Detroit Edison and Consumer Energy Contracts**

Alpena Power Company : Contracts								
Map Key	Seller	Quantity	Cost	Term	Renewable Energy Type	Request for Proposal	Commission Approval	Commercial Operation Date
26	Consumers Energy	"Bulk of RECs needed to meet the RPS"	\$30.37/REC (estimated)	20 Years	MISC	Unsolicited	9/15/2009	8/4/2009
AEP/Indiana Michigan : Contracts								
	Seller	Quantity	Cost	Term	Renewable Energy Type	Request for Proposal	Commission Approval	Commercial Operation Date
25	Fowler Ridge Wind Farm II	50 MW	Redacted	20 Years	Wind	Unsolicited	11/15/2009	2/15/2010

## **Appendix G - Experimental Advanced Renewable Program (EARP) and SolarCurrents Program**

Consumers Energy's EARP is a two-year pilot program for solar PV projects. Under the program, the customer receives a firm price (residential: \$0.65 - \$0.525/kWh and commercial: \$0.45 - \$0.375/kWh) for each kWh generated by the customer's solar generation system over a 12 year period. The total program size is 2 MW (2,000 kW) where 1,500 kW of the total program size is reserved for commercial projects and the remaining 500 kW is allotted to residential projects.

The program filled almost immediately and there continues to be a significant waiting list. The program was very well received and there was a remarkably high level of customer interest.

Detroit Edison's SolarCurrents pilot program is comprised of a 5 MW customer-owned program and a 15 MW company-owned program. The maximum solar PV generator size under the customer-owned program is 20 kW and the customer is required to participate in the company's net metering program, meaning that the project size is limited to a generator with annual output no greater than the customer's annual electric needs. The customer-owned SolarCurrents program provides an up-front REC payment equal to \$2.40/Watt of installed solar PV which is approximately half of the total system cost. The company purchases the remaining RECs through a monthly payment/on-bill credit equal to \$0.11/kWh for 20 years. As of October 2010, 230 installations were completed totaling 1.4 MW of solar PV capacity.

Detroit Edison's company-owned SolarCurrents program includes larger solar PV projects that are either located on Detroit Edison or customer premises. Customers selected to host a solar PV project will receive an annual credit on their energy bill based

on the system size, as well as a one-time, upfront construction payment to cover any inconvenience during installation. In March 2010, the Company provided an opportunity for customers with the proper roof or ground location to apply to host a solar PV project. Currently, six projects are under construction totaling more than 2 MW of solar PV capacity. Participating customers are General Motors (500 kW), Ford (500 kW), Blue Cross Blue Shield (220 kW), Monroe Community College (500 kW) and Detroit Edison (422 kW). The Company contracted with Nova Consultants to construct up to 3 MW of solar PV at a cost of up to \$18 million under the program.

The SolarCurrents program, particularly the customer-owned program, represents a significant incentive for customers and is very well received within the solar PV community.